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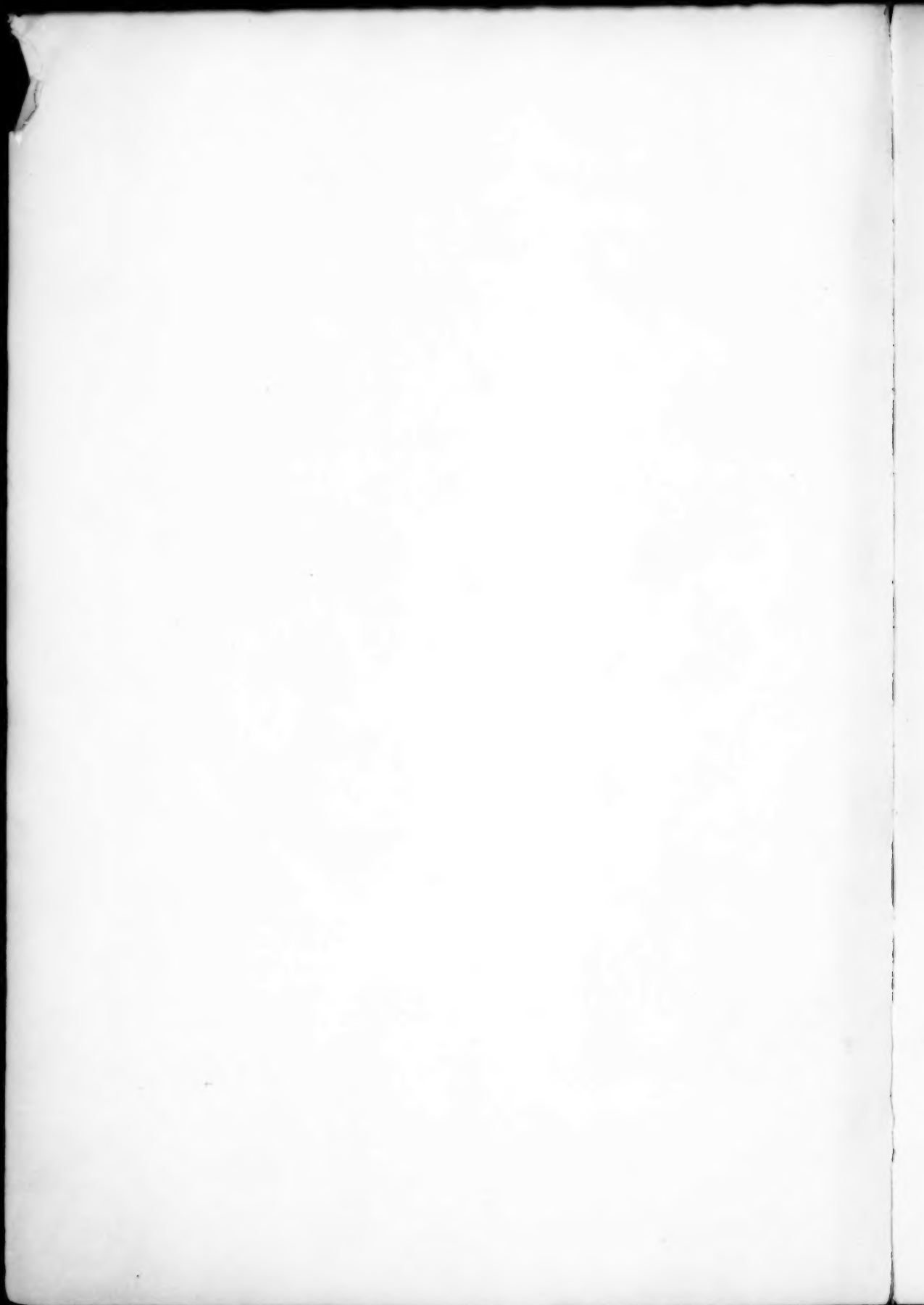
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36TH AND WOODLAND AVENUE

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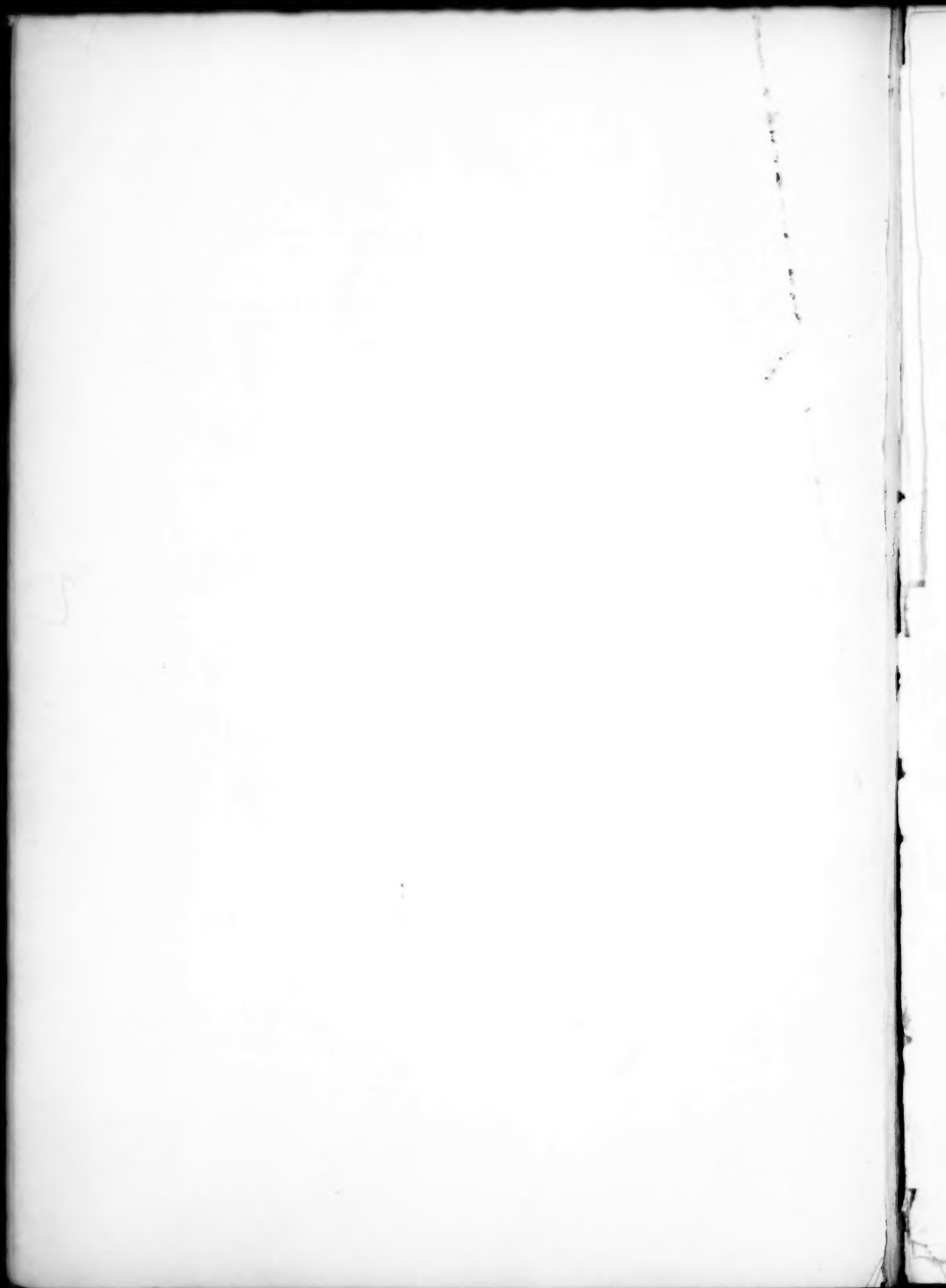
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COTTON IN SOUTHERN AGRICULTURAL ECONOMY

BY HARVIE JORDAN,
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There are but two real necessities to human civilization, the first is something to eat, and the second, clothing. Wherever the temperate zones girdle the earth the first is satisfied by food supplies of various kinds, but the demands of the second can only be adequately met by the cotton crop annually grown in those states of the American Union lying along the South Atlantic Ocean and the Gulf of Mexico, known as the southern states. By name, they are Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Tennessee, Texas, and Oklahoma. Twelve states in all, and within their territory is produced three-fourths of the world's total supply of raw cotton upon which a large majority of the civilized and semi-civilized nations of the earth absolutely depend for clothing. This little spot of territory upon the earth's surface is exceedingly small as compared to the whole, yet its annual yield of raw cotton is vital to the peace, prosperity and comfort of the hundreds of millions of population and of many nations. Possibly not more than two million men are actually engaged each year in the production of the cotton crop of the South, in the states named, and yet the product of their labor is of the most vital import to all the countries of both the Eastern and Western Hemispheres. This is not true of any other great staple commodity of the world, hence it is, that the South can, and does, congratulate itself upon a practical monopoly of one of the two great world's necessities.

The southern states are now, and have always been, largely an agricultural section of the American Union, with the production of the fiber of cotton as the leading monetary source of revenue. The South does now, and has always, depended upon cotton as its financial basis, and the bed rock foundation upon which the material development and progress of its industrial and educational interests rest. The active development of cotton mills in the states of the Carolinas, Georgia and Alabama did not begin to develop on an

extensive scale until 1889 when a half million bales of cotton were consumed in southern mills during that year.

Within the past twenty years the annual consumption of southern mills has increased 500 per cent, the consumption in 1907-8 being in excess of two and a half million bales, and somewhat more than the entire consumption of northern mills. In 1847-8 the entire consumption of southern mills did not exceed 75,000 bales, and the annual consumption of 200,000 bales was not reached until 1879, so that within the past thirty years southern mill takings have increased twelve hundred per cent. If one-half of the same ratio of increase should hold for the next thirty years southern mills would require for consumption in the year 1939 the enormous total of 15,000,000 bales, which is one million bales in excess of the heavy yield of raw cotton produced in 1908 in all the cotton growing states of the South. Within the next quarter of a century manufacturing in the South will doubtless exceed in the aggregate the present importance of agriculture.

The Production of Cotton

The South's total commercial crop in 1843 reached 2,000,000 bales and in 1858-9, or fifteen years later, had doubled to 4,000,000 bales with an average price of six cents per pound in 1843, gradually increasing each year to twelve cents in 1858. In 1865, the production had again fallen back to that of 1843, but crossed the 4,000,000 mark once more in 1870. During the four-year period of the Civil War we have no record of production, but prices for spot cotton advanced in 1864 to \$1.90 per pound, dropping to thirty-five cents one year later, or the fall of 1865, when hostilities had ceased for many months and conditions were getting on a normal basis once more. By 1870 the average price was twenty cents per pound. There was no increase in production from 1870 to 1875; on the contrary there was an annual lessening of the yield as compared with that year, but after 1875 production received a gradual impetus and fifteen years later, or in 1890, the crop had again doubled, the total commercial crop for that year being 8,674,000 bales. The average price for spot cotton of twenty cents per pound in 1870 had gradually declined with varying fluctuations to eleven cents in 1890.

In 1892 the production dropped back to 6,600,000 bales, but

more than doubled this yield in 1904—twelve years later, the crop amounting to 13,654,000 bales. Six cents per pound was the average range of prices for middling cotton during the heavy movement each season in this last twelve-year period, though prices advanced during short periods in the fall of 1903 to thirteen cents and in the early spring of 1904 to seventeen cents per pound. Since 1904 the production of cotton seems to have reached its limit for the time being, the production of 1908 being about the same as in 1904, with a very marked decrease in the yield of 1909, the latter however being due largely to unfavorable climatic conditions and the ravages of the boll weevil in several of the states in the southwestern section of the cotton belt. The cotton acreage for 1908 and also 1909 was practically the same. The average price of spot cotton, basis middling, has been from ten to twelve cents per pound during the past four years, with prices seeking the fifteen cents level in the fall of 1909. It will be noted that since 1843 the crop has doubled in production on an average in each fifteen year period.

Monetary Value of Crop

The largest crop of cotton grown in the South before the close of the nineteenth century was grown in 1898, when a yield of 11,250,000 bales was harvested and marketed at an average price of five cents per pound. The total monetary value of this large crop to the South was only \$280,000,000. In 1905, however, with practically the same yield as in 1898, but with an average price of eleven cents per pound, the gross revenue from the crop that year reached the splendid aggregate of \$600,000,000 or more than double the value of the crop of 1898. In 1906 the yield reached a total of 13,500,000 bales and sold at an average price of ten cents per pound or a grand total of \$675,000,000. These figures represent only the monetary value of the lint cotton and do not include an additional revenue to the farmers, from sixty to seventy million dollars annually, derived from the sale of cotton seed to the oil mills of the South.

For the past few years the aggregate sale of lint cotton and seed each year represents a monetary income to the cotton growers of between seven and eight hundred million of dollars. This is nearly twice the annual output of all the gold mines in the world at the

present time. When converted into the finished products the present annual crops of cotton in the South have a market value of about three billion dollars. The present export of raw cotton from the South is about 8,000,000 bales annually, representing a total income to the United States from this source alone of \$400,000,000. It would require the entire production of the gold mines of the whole world for one year to buy and pay for this crop. It is due entirely to the large annual exports of raw cotton from southern ports to meet the demands of foreign mills that the balance of trade is retained in favor of the United States in our dealings with foreign nations. These annual exports of raw cotton made in exchange for gold from Great Britain and the continent of Europe represent the great bulwark of safety to the financial institutions of the American nation, hence the production and marketing of the South's great staple crop each year, the enormous wealth it represents and the absolute dependence of foreign nations upon its fiber is a matter in which the whole Union is as vitally interested as are the population and institutions of the twelve states in which the crop is grown.

Cotton Acreage and Yield

Only within the past ten years has the federal government made any determined effort to secure official data regarding the acreage planted in cotton each year. The system is being perfected year by year through the Bureau of Cotton Statistics in the Department of Agriculture at Washington. In 1898 the total cotton acreage in the South was estimated at 22,656,000 acres, and the yield that year as already recorded was 11,250,000 bales, or practically one-half a bale of lint cotton per acre, the heaviest yield per acre ever harvested. Since 1898 the annual increase in acreage has been about 1,000,000 acres, so that in 1909 the estimated acreage was 32,000,000 acres in round figures, there being practically no increase over the acreage planted in 1908.

A matter of great significance, however, is, that with the annual increase in cotton acreage the annual average yield of lint cotton per acre has decreased. Where in 1898 the average yield of lint cotton was two hundred and forty pounds per acre, this yield had dropped to one hundred and eighty-five pounds in 1903, and will hardly average two hundred pounds since that time to the

present. If the yield per acre of 1898 could be maintained the South would now be producing 16,000,000 bales annually on the acreage planted, but with an increase of 10,000,000 acres in 1909 over that planted in 1898, the total yield for the present year will not likely exceed to any material extent at least the crop of 1898. It is quite evident, therefore, from these statistical comparisons that the production of cotton in the future must be based more particularly upon increasing the yield per acre rather than increasing the acreage already under cultivation. This is a matter for the serious consideration of the cotton growers and all those whose interests are more or less vitally connected with the production of cotton. The application of more scientific methods of preparation and fertilization of soils, the use of improved varieties of seed and proper culture of the crop during its period of growth are matters of highest importance in the future production of cotton in this country, if this production is to be properly carried forward from an economic standpoint, and prosperity continue for those most directly engaged in cotton culture.

Cotton Growers Making Progress

It cannot be denied by anyone acquainted with southern agriculture that the cotton growers of the South within the past ten years have not made marked progress in the splendid industry in which they are engaged. With the dawning of the new century, the great army of white farmers in the South, typifying as they do the purest representatives of the Anglo-Saxon race on the American continent, seems to have shaken off the lethargy which appears to have possessed them for the previous quarter of a century. With renewed zeal and that unbroken determination characteristic of their race, they have launched out afresh to recover their lost fortunes and strive for the highest pinnacle of success in their chosen occupation.

Animated with the spirit of organization they have banded together in various agricultural organizations, that by co-operative effort they might advance and develop the business of growing cotton at a profit and protect their mutual interests in the markets of the world. The individual cotton growers are rapidly introducing improved methods in the preparation of their lands, building better homes, pursuing a sensible system of crop diversification, raising

more of the necessary food supplies at home, giving to their children a better and more refined education, pushing forward the demand for better public roads and withal gradually becoming strong and forceful characters in the solution of those problems which stand for advanced civilization in a great nation. The antiquated and primitive methods of the past are fast giving away before the introduction and adoption of modern systems which are more practical and economic.

Thousands of cotton growers in the South are rapidly divorcing their farming operations from the old iniquitous credit system which bound them to supply merchants, and are bank depositors to-day where ten years ago they were borrowers and debtors. While the cotton growers are paving their way to independence and prosperity the hundreds of millions of dollars annually received by the South for the sale of its great cotton crop is finding its way into the various arteries of trade, giving renewed impetus to the financial, commercial, and industrial development of the whole section so bountifully blest through the fiber of the cotton plant.

The primitive methods heretofore employed in the ginning, baling, warehousing and marketing the cotton crop will soon pass away through the rapid introduction of modern gin machinery which will separate the lint from the seed without injury; and through the installation of gin compresses which will bale and prepare the cotton not only in the most satisfactory manner for the spinner but also in the most economic way from the standpoint of tare, density, handling, storage, and transportation. The introduction of these better modern methods of preparing the cotton for market and shipment will subtract from the present high fixed charges for handling the crop a sum not less than \$50,000,000.00 each year and otherwise be of tremendous advantage to the growers, transportation companies, the spinners, and the cotton trade generally.

With decided reforms now working out in the better cultivation of the crop, its more economic handling and the gradual increase in production to meet the ever-increasing demands of consumption, it is conservative to say that before the close of another decade the annual cotton crops of the South will be selling for the enormous sum of one thousand million dollars. What this will mean for the future development of the South in all its varied departments of life is hard to estimate or to prophesy. When we

consider further that cotton is only one of the hundreds of important resources of the South, recognizing as we do its wonderful intrinsic value to the nations of the world and more especially to the South, we cannot but wonder at the coming possibilities of this section of the American Union so signally blest with unrivaled climatic conditions, magnificent agricultural resources, vast fields of timber, coal, iron, and water powers, the most of which are yet in their infancy so far as development for commercial needs are concerned.

Southern cotton growers and southern lands will meet every requirement of the world's needs for cotton during the coming centuries. Through the proper conservation of the soil the South can, and will, produce when required thirty times the amount of raw cotton now grown within her territory, and receive as an annual income from the natural monopoly it possesses a tribute of billions of dollars from the civilized nations of the world.

THE NEGRO AND AGRICULTURAL DEVELOPMENT

BY ALFRED HOLT STONE,

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To say that Negro labor has been the most important single primary factor in the development of southern agricultural resources, is to restate a very old and commonly accepted historical fact. To say that such labor was absolutely essential to southern development, is to repeat a statement whose age does not entitle it to exemption from the category of historical fallacies. To regard the further development of southern agriculture as dependent upon Negro labor, is to ignore both the history and the present status of an important branch of American industry.

The agriculture of the southern colonies of Great Britain differed essentially from that of the colonies along the upper Atlantic seaboard. The latter may be said to have been concerned mainly with the production of food supplies. The chief end of the former was the creating of revenue. It was the difference between an agriculture devoted to the production of a great staple crop, intended for foreign export, jealously regarded by the parent government as one of the mainstays of its commercial and maritime position among the trading nations of the world, and an agriculture devoted to the production of commodities for domestic consumption. In the one case, agriculture became, naturally and inevitably, the chief business of the section or country engaged in it; in the other, just as naturally, it was subordinate to some other form of industry.

The first essential in any staple agricultural system, is a combination of soil and climate favorable to the production of a commodity which finds a ready exchange for money in the markets of the world, and which, in either a raw or partly manufactured state, is susceptible of transportation through long distances. Whatever the final course of development followed by any country possessing these natural features, its original foundation will be staple agriculture. This is subject only to the modifying influence of the presence of one of the precious metals. The second essen-

tial to the development of a system of agriculture,—assuming of course the existence in some form of the necessary capital,—is a supply of labor adapted to the work to be performed. The crux of the purely economic argument for and against slavery, as a southern industrial system, was in this question of the supply and adaptability of labor for and to southern staple agriculture. The controversy was never settled, and it is as inviting a field for economic discussion to-day as it was before 1860. The economic justification for slavery, in the early period of the institution, was founded upon two contentions; first, that no other race than the Negro was capable of doing the necessary work under the climatic conditions of the staple producing colonies; second, that the only means whereby a supply of Negro labor could be had was through some system involving purchase and control.

If Negro labor was the only labor which could be employed at the outset, in establishing the agricultural industry of the British West Indies,—that is, if the first of the above propositions is correct,—then slavery was a necessary incident to such agriculture, and the second proposition is also established. There has never been a voluntary emigration of Negroes from Africa. But the history of some of the West Indies, notably San Domingo and the Barbadoes, suggests that white labor might have been employed even in the laborious work of sugar production. That the small white holdings in Barbadoes were absorbed into larger estates, and the free white labor supplanted by Negro slave labor, also illustrates the fallacy of an old economic axiom dear to the hearts of certain anti-slavery economists,—namely, that slave labor could not compete with free. The truth is that at one period or another white labor played an important part in the agricultural development of practically all of the southern and West Indian colonies. At the same time, the evidence leads strongly to the conclusion that in most of those colonies the climate and other physical conditions were such during their periods of original settlement that the Negro was better fitted than the white man for productive field labor on an extensive scale. We shall probably state the case correctly if we say that owing to his adaptability to the work required under the given conditions of soil and climate, and the power of control incident to his status as a slave, the labor of the Negro was preferred to that of the white man by the early producers of the great tropical or semi-tropical

agricultural commodities. After all, however, this was only a preference.

The course of this first great American industry would have been different, had its dependence been upon white labor alone, and its development would have been slower, but this is the most we can say. Sugar would still have gone from the West Indies and Brazil, and indigo and rice from Carolina, and tobacco from Virginia, if not a Negro had ever set foot on American soil,—and the South would still supply the world with cotton. Whatever the opinion of those most closely in contact with Negro labor,—who in the main know little or nothing of any other kind,—it is none the less a fact that white labor can accommodate itself to any work which can be performed by the Negro, whether it be the draining of Mississippi lowlands in 1860, or the digging of the Panama Canal a half century later. Yet we must begin a consideration of the future of southern agriculture with some millions of Negroes already on the ground. No matter what might have been the history of southern agricultural development, the fact remains that in it the labor of the Negro has played a dominant part. In speculating upon what his part is to be in the future, however, we should not follow the false lead of assuming such further development to be wholly dependent upon him.

The agricultural industry of the South is still the growing of staple crops. Among these crops cotton still holds the dominant position which it assumed shortly after the invention of the gin. The other staples are tobacco, rice and sugar. Indigo died with the Revolution. Cotton owes its supremacy largely to the fact that it can be grown over a greater range of territory than either of the others. The other three can be grown to some extent outside the areas now devoted to them, but, with the possible exception of rice, they give no promise of even partially successful competition with cotton. A future permanent increase in the output of southern tobacco is probably more dependent upon improved methods of cultivation than upon any considerable increase in acreage. Nor is there much probability of a permanent extension of the cane area. It remains to be seen if the recent spread of rice growing, in Louisiana and into Texas and Arkansas, is stable or temporary. In so far as the Negro's part in the future of southern agriculture is concerned, whatever it is destined to be, it is linked with the future of cotton.

Cotton growing as an industry has suffered the vicissitudes which seem the common lot of the semi-tropical staples. It has never been on a sound basis, and is not to-day. There have been too many middlemen, and too many who, while outside the actual business of growing the staple, have largely controlled the policy and actions of the real producer. There has been something inherently vicious in the whole system and methods, from an economic standpoint,—from the beginning to the present time. There has always been something peculiarly attractive about the hazards of the business when conducted on a large scale, and, like sugar in the earlier days, it has drawn to it men who were better fitted for other fields, and it has wrecked more fortunes than it has made. When the gentleman adventurer from England went out to the Barbadoes, before the end of the seventeenth century, it was with the hope and expectation of reaping a rich harvest from the sugar fields, and soon returning home. He had no capital, but that was easily found by the factor and merchant in London. He had no labor, but his merchant easily arranged that with the agents of the Royal African Company. His equipment and land, like his labor, he bought on credit. If he were successful during the first year or two, he repaid his obligations to the factor, in whole or in part, but always, almost without exception, he also at once borrowed again, and on a larger scale, and increased his operations. He bought more land and machinery, increased the number of his slaves, put his domestic affairs upon a more lavish scale,—and always by a liberal use of his credit. Another crop either enabled him to meet his obligations and still further increase his operations, or it left him stranded. Sometimes he returned in wealth, but oftener he ground out his life in an endless effort to make annual interest for his factor, and bequeathed a mortgaged estate, to be foreclosed when there was no one left either willing or able to carry the load.

No one acquainted with the economic history of the British West Indies will say that this picture is overdrawn. Even the most superficial reader must realize that behind such methods there must have been some extraordinary inducement to the persons who furnished the capital. It is here that we touch the most vicious feature of the entire so-called plantation system of agriculture. The factor not only demanded a high rate of interest on the money furnished and on old debts carried, but a fundamental feature of

the business was the payment of both principal and interest in kind. The factor's profit was by no means confined to the interest charged on his loans. In large part it consisted of the commissions which he charged both on the purchases made for his customer and on the commodities sold for him. The basis of credit was the quantity of sugar the planter undertook to produce,—all of which had to be consigned to the factor. There was thus not only no incentive to even a crude form of agricultural diversification in the sugar colonies, but any such tendency was strangled by the demand for more sugar, and the consequent devotion of every available acre of ground to an effort to supply the demand. No country, no region, however fertile, can forever stand the outward drainage of its earnings in the shape of interest payments and purchases of things which should be grown within its borders. Inevitable bankruptcy is its final portion,—and this came to the richest as well as the poorest of the British West Indies.

The so-called plantation system was in fact merely borrowed, or transferred, from the British islands to the British colonies on the continent. The history of the Barbadian and Jamaican sugar planter became in large measure the history of the Virginia tobacco planter and the South Carolina grower of indigo. The Revolutionary War wiped out mortgages held in London and Liverpool, but the system remained. When rice and cotton became the chief business of the planters of South Carolina and Georgia, the merchants and factors of Charleston and Savannah succeeded to the controlling positions so long held by their predecessors abroad. Instead of sugar, the basis of credit became the number of bags of rice or bales of cotton which the planter could produce, and the vicious circle of a steady increase of credits, debts, interest, land, slaves and crops repeated itself over and over again. It is not meant to convey the idea that there were no escapes from this routine of labor and debt. In the aggregate a number of planters became independent, but the description holds for the great majority. There is no more pathetically untrue picture in fiction than that of the "typical antebellum southern planter," rolling in wealth and living a life of luxurious idleness. As a class, they were the pioneer captains of industry in America, and, in the main, they worked hard, lived on credit and died in debt. The people who reaped most from the system were the merchants and factors who supplied the

planter with capital and handled the product of his toil, they, and the cotton manufacturers of England,—Old and New.

What has all this to do with the Negro and the agricultural development of the South? The Negro furnishes the connecting link between the past and present of southern agriculture, and he is to play an important part for either good or evil in its future. Had the foundation stone of antebellum southern agriculture been white labor, instead of Negro, the increase of cultivated acreage would have been slower, and the production correspondingly less, but the process of growth would have been sound at the core. Even as it was, there were thousands of small white farmers scattered throughout the South. Without Negro labor, the number of these would have been many times greater. Undoubtedly there would have developed some form of plantation system, but it would have been based upon free white labor, and would have served as a great training school for the production of small farmers.

The Civil War did not destroy the old plantation system. It merely altered the legal status of one of its elements. The Negro in the mass remained economically untouched by the gift of freedom, in so far as any free agency of his own was concerned. Where before, his labor had been bought with his body, now it was his labor alone which came to be trafficked in. The latter was a cheaper transaction than the former, and required less capital. It therefore was engaged in by a greater number of people. Formerly, a high order of intelligence was required to handle successfully a plantation on a large scale, involving as it did the care of the physical well being of its labor, as well as the financing of its operations. Now, the main requirement came to be a small line of credit with a local merchant, and the ability to get together enough Negroes to make a crop for a single year. The best test of success in "making money out of Negroes" ceased to be the capacity to keep down sickness among them, to feed and clothe them properly, to keep them contented even though not free, to work them to the best advantage, having always in view the fact that life was the only limit to their tenure of service. It came to be, instead, the ability to secure their labor at the lowest price, to give them the least for the most work, to keep them satisfied, not by a full stomach, but by the cajolery of promises never intended to be kept, and the unction of words which an antebellum planter would have scorned to utter. Booker Washington has

repeated over and over again the phrase that before the war the Negro was "worked," but that now he has learned to work himself. The truth is that the Negro has been "worked," as the word is used in the vernacular of the street, to a vastly greater extent since he has been free than ever he was as a slave. Whether it is to be attributed to racial traits and deficiencies, or to a temporary handicap which time will remove, the fact remains that whether as a plantation laborer under modern conditions, or as a tenant securing his yearly supplies from a merchant, the Negro places a tremendous premium upon dishonest practices, and offers to cupidity a most alluring field.

The Negro's part in the future of southern agriculture is problematical. The present method of growing cotton is roughly divisible into three systems. In the first, the land is operated in considerable tracts, varying in size from a few hundred acres to several thousand. Here the labor is almost wholly Negro, working either for wages, or as renters, or for a share of the crop. In the second, the land is owned by a white man who rents it outright to tenants, and has nothing to do with its operation himself. Here the tenants may be either white or colored,—varying according to geographical location. In the third class we have the small farmer, who owns and tills his land. The first of these is the true plantation system, as it exists to-day. Its mainstay is the Negro, and without him it would not last a generation,—possibly not a decade. If the South were filled with white labor, the large plantation would be broken up into smaller tracts, for such labor could not be exploited sufficiently to make the maintenance of large properties more than spasmodically profitable. Such as might remain, would have to be operated on a basis of wages. As there is no likelihood of an influx of white immigration to the South, the question remains one of speculating upon the length of time the plantation system, based upon Negro labor, can be maintained. Under this system the Negro's part in southern agricultural development will remain merely the part played by any labor, working under supervision in any line of industry. Where another furnishes the capital, the brains, and the direction, the part played by labor is no more than that of a tool or a machine. The only active, positive part possible for the Negro must be either as an independent renter, gradually emerging into the landowning class, or as a landowner himself.

It is only here that his economic status is really higher than that of a day laborer; only here that he has either initiative or control; only here that he becomes an independent economic force.

The Negro has it in his own hands to play either an active or a passive part in the upbuilding of the section in which he lives, which is still primarily an agricultural region. In so far as that section has attempted to depart from the great staples, and turned to other branches of agriculture, save in rare instances it has been exclusively the work of the white man. Of the staple crops, it is only in cotton that the Negro has made any substantial progress. Here, with all our statistical labors, when we come to measure his advance, we find ourselves floundering in a tangle of figures which may mean much or nothing,—and which have to be explained and interpreted and laboriously handled before they mean anything at all. We do not know to-day, nor does any census tell us, how many independent Negro renters we have in the South, as distinguished from those nominally returned as "renters," but whose economic status is really no higher than that of a laborer at a daily wage. We do not know, even approximately, what part of the American cotton crop, at the end of any decade, was the result of Negro labor,—nor whether his part in its production is increasing or is on the decline.

Rather than bring these reflections to an end with an idle speculation about the future, I prefer to conclude them with the hope that the census soon to be taken will throw more real light upon the economic status of the American Negro than has been given us by any previous investigation. If it does, it will place under lasting obligations every student of vital American questions.

FINANCING THE COTTON CROP

BY HENRY S. REED,
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The opportunities presenting themselves to those looking toward the South as the future Cræsus of the Western Hemisphere all seem to have for a base or foundation the cotton grown there, and, at present only partially transformed by its mills into the fabrics for retail consumption over the counters of the stores in all sections of the land. Cotton is a universal necessity and of the animal and vegetable textile fibers of trade and commerce it ranks in quantitative proportions as fifty-five per cent to the whole. To supplant cotton with wool would require more sheep than the pastures of the land would support, and to supplant cotton with any other textile fiber would require the doing of things, the changing of conditions which would almost demand the turning back of time to the ages when the lamp of civilization did not penetrate the gloom and darkness of ignorance. Cotton is not exalted because it is an article of common use; it is not appreciated by those who do not study it, because they fail to mark its importance as an article of necessity comparable to no other product. Should some freak of nature deny the world this one crop the poets would sing its praises in more voluptuous tones than those addressed to any of nature's blessings, for the reason there is no possible comparison between the lint of the cotton gin as an article of need and any other of the many blessings which an all-wise Providence has bestowed upon us. The precious metals and stones are nought in value or use; the silks and spices of the famed land sought by ancient explorers pale into thinnest vapor in comparison, and the export value of all the agricultural products of the United States is insufficient to offset the value of the new gold the American cotton crop brings to this country annually. The exportation of copper, wheat, corn, wheat flour, leaf tobacco, illuminating oils, lumber, bacon, hams and shoulders, and lard, lack ten million dollars of aggregating in value the exportation of cotton and cotton by-products. This being true is it not strange so great an

industry should have remained for all these years a prey to the spinners and a field for exploitation by the speculators, combining when necessary for their own good and opposing when contra interests appeared, but always grinding as between the nether mill stones the producers of the cotton plant? Cotton is king. King of the domain of Agricola. Uneasy rests the crown of king cotton, for the king is often conquered and his subjects rendered heart-sick and poor indeed by those who prey upon the cotton belt.

To finance the American cotton crop in the interest of the country producing it, in the interest of the men who grow the lint, is without doubt the most important move capable of being made by southern people. I am not disposed to make any display of sectional interest, but in handling the subject under consideration, most emphatically urge southern men to interest themselves in the labor of financing cotton, because this money product of the South should be considered by men who know and sympathize with the man who toils, and know and appreciate the important part cotton plays in the various industries of southern states. To be financed and controlled by men who care only for the individual profit to be derived, would without serious controversy result in the further enthrallment of the toiling masses, hence it is quite impossible to look with kindly eyes upon moves looking toward the control of the crop by men living beyond our borders, and engaged in the more or less doubtful occupation of speculation.

I am not opposing wealth nor those who control mighty sums of money, indeed such a course would of very necessity thwart my desires to see the cotton crop amply protected in a financial way. The man of ideas and money, the man of courage and power, is a need not to be ignored whether he reside in the North or the South, whether he hails from the Occident or the Orient. But when contemplating the financing of the imperial crop of the South, he should remember the years of deprivation endured by the cotton planter, and knowing the unjust profits taken by the spinner and speculator, organize forces for the emolument of the planter and the evening up of conditions between producer and manipulator. If ever in the history of modern times the "farmers were farmed," it is certain the cotton planters are controlled by the spinners and the big and little interests following in their wake as a horde of ruffians follow in the rear of an army.

Most of the crop each season must of necessity be rushed to market as the bales come from the ginneries. The merchant and the banker have made the planters' obligations due in October; the fifteenth of the month is an almost universal settling day and there is a scramble for the bales as fast as they come to town, and the merchants and bankers refuse to make any other time for the maturing of bills and notes. Thus those who make a crop on credit must respond with cotton as ginned and until the debts are paid. This cotton grown on rented land or on credit for supplies such as meal, flour, pork, and grain, is called "distress cotton," and, painful as it is to record, the larger portion of the crop each year is made in this way. The rush in marketing distressed cotton depresses the price of every other pound of lint produced, hence the man producing cotton on a cash basis, growing his home supplies, is made to suffer a financial loss because of the improvidence or misfortunes of his neighbor. The interests buying the product, knowing the helplessness of the people and the abandonment of the industry, prey upon the country as heartlessly as corporate interests ever preyed upon a people far removed from the scene of action, and with whom they never come in personal contact. This is a condition which must be changed, and had the industry been less gigantic it would have been changed long ago. However, because the industry is one of grand proportions does not signify simple rules of business cannot be applied with the same degree of certainty in their accurate workings, as have characterized their workings in huge railroad corporations, steel companies and other industrial enterprises. Indeed when once the plan is hit upon it will be found simple and will follow the course of good business procedure. There is no mysterious verbiage in good business transactions and the complicated, ambiguous, circuitous route suggested by some will be made to read smooth and clear to any mind capable of understanding business economics.

The question how to market the crop, for of course that means to finance it, is attracting better attention to-day than at any other time in the history of the industry; men of brain and power are considering the best possible means for putting this industry on a footing enabling it to compete with the interests buying southern cotton each year. For it must be understood, the buying interests are completely organized and for that reason the

South in its present unorganized condition is very much at the mercy of those interests.

No reference is here aimed at political, educational or agricultural organizations. They in themselves are good and useful, but do not in the least have anything to do with the greater problem of financing and successfully marketing this great staple.

Again every move that has been made for the betterment of the cotton crop and those producing it has had its beginning in the meetings of farmer organizations and their trend has been such as to build up in the minds of the public, certain forms of caste, the producer representing one and all other interests in the South another caste. Whether it be literally true or not the feeling exists that the man of business in the very midst of the cotton belt, is bitterly opposed to any move inaugurated for slow marketing the staple. It is to the business man's interest more than it is to the farmer's interest that the crop shall bring its full value, that spinners in the North and in foreign lands be made to pay that which is just; to pay a price giving the producer a compensation for labor, money invested and for thought, on some sort of a parity with wages and profits gladly allowed workers in other channels of human endeavor. However, since the feeling does exist that a caste has been created between the two elements, one can readily understand the financing of the crop must be taken up by the man of affairs and not by the actual producer.

Magnitude of the Crop

The American cotton crop, valued at around \$800,000,000 annually, a sum equal to the combined output of all the gold mines in the world for two years, must be financed in such a practical manner as to permit its marketing from month to month as demands from spinners present themselves, thus preventing the congesting of an annual supply upon an overstocked market during the last months of the year.

Few people comprehend the vast magnitude of the cotton crop. Little do the majority of our business men realize the part American cotton plays in international commerce; how it binds nations together in ties more exacting than all the international laws solemnly enacted and sanctioned by the wise diplomat of modern times. Indeed, there need be no fear of war with Uncle Sam on the part of a spin-

ning nation unless conquest and possession are anticipated. The great spinning centers must have cotton to spin and to obtain it without encouraging untold hardship, but, if need be, hardship will be faced as it was during the Civil War period, that a greater calamity may be averted. We refer to idle mills for want of supplies for spindles and in a land where food for human bodies must come from distant lands; hence to feed the idle artisan on provisions carried across the ocean means something in the way of cost to those who fill the spoon of charity. The mere suggestion of a cotton famine in Manchester causes cold chills to creep up the back of the sturdy Britisher, and well it may, for the idle hand and brain spell danger in any community.

The war waged by the British spinner that the American producer may be kept in reasonable subjection is an old one, well conceived and ably conducted, and to cause an evening up of conditions in the great war between producers and the completely organized consumers, there must be some clear-headed organizing in the interest of our southern planters. In other words, the cotton crop must be financed so that it may be marketed in a manner compatible with supply and demand. To accomplish this there must be certain prime and principal corner-stones laid deep and strong and cemented by integrity and acumen.

First: We must establish ample warehousing facilities at principal ports and in the various districts, bonded by the government and managed on business principles, with each bale warehoused, sampled and marked to correspond with bale, and said sample exhibited in the main or parent warehouse enabling a purchaser for foreign or domestic mills to buy spot cotton by sample and without penetrating the cotton belt.

Second: We must establish a great cotton bank and trust company, capitalized and managed in the sole interest of the cotton crop. The details must be worked out by our best and most experienced bankers. The stock in such an institution would be considered gilt-edge by the cotton world in all countries.

Third: We must create a money center in the South and thus bring from foreign lands the gold obtained in exchange for lint cotton to the South direct, enabling its distribution throughout the cotton growing states. This is all within the pale of possibility, only needing the co-operation of our southern bankers to make Dixie the richest country on earth.

The building of warehouses and the sampling of bales and the keeping of samples on exhibition for the purpose of making sales is all in the line of simple business being readily suggested to any one giving the matter a few moments close thought. This feature will not be opposed by any one; all interested will agree it is the sensible thing to do. The founding of a great bank and trust company will not meet with strong objection. But when one suggests the changing of things to such an extent as to demand the creation of a new money center, then the roar of distant thunder may be heard starting in the vicinity of Wall street and rolling in mighty power southward, finding an echo in every little banker's heart south of Mason and Dixon's line. Southern banks and southern bankers are like people engaged in any business who must have, because of their limitations, or through force of habit, a fountain head, a source of supply, a bureau of information; and southern financial institutions recognize the influence of Wall street.

We must break away from the traditions of the past and become absolutely free and independent. The new gold which cotton brings from foreign lands is of such vast sums that it is absolutely unwise to permit it to be returned to New York instead of to New Orleans, for example.

The idea of establishing a money center in the South is, of course, bearding the lion in his den, but if we are to throw off the yoke borne so long and so patiently and walk forth in the invigorating atmosphere of freedom, we must be bold. Bold, indeed! Is it evidence of forwardness or courage to ask for one's own? The South brings into life so far as the United States is concerned vast sums of gold, say in round numbers four hundred million dollars. This new gold would not come to the aid of our business but for the cotton crop of the South. This vast sum of gold is paid to our people by people in foreign lands in exchange for the raw, the unmanufactured, cotton sent abroad. Since the South produces this, is it not right the South should first supply its own needs from its own money before loaning it to the business people in other sections of our country? I think so. To-day it is returned to America through Wall street and Wall street in turn loans it out to the grain country, the cattle ranges, the mining sections, and to the speculative world and it is possible cotton money is used to distress the cotton producer and lower the price of the article

which brought the money into existence. It would be better by far, it would come vastly nearer meeting the views of unselfish men, if this new gold came into the United States through some southern money center and thus should find its way through the cotton belt, aiding our industries and stimulating our people to grander achievements, and, when our wants had been satisfied, then hand out generously the surplus that all sections may receive a benefit from this truly imperial product. Those bankers and moneyed men opposing at first because of their allegiance to Wall street interests, will allow the brass collar to be removed when they discover other bankers are in favor of conducting the business of the South in the South. The great industry should be handled sympathetically because millions of people in the producing country depend for their very living on cotton and millions more in the manufacturing centers find it their only means of support. The first step in such an undertaking as contemplated needs a promoting fund of magnitude, too great for any one man or set of men to contribute, hence it should be secured from the people in all sections of the cotton belt since all sections are to be benefited.

The people in each state in the belt should subscribe their quota to the promotion fund. These subscriptions should not be called for until the whole amount has been subscribed. They should then be paid into the hands of a trustee in each state. These trustees from the various states would then meet and create a trust, banking and warehouse corporation and open books for the sale of stock in the biggest proposition ever presented by the South, and these men who succeed in establishing a system for financing the world's greatest money crop will write their names so firmly in the hall of fame that time will not be long enough to cause an effacement.

To do all these things may seem stupendous to those who give such matters close thought, and, again, to those who have looked upon this question as a part of politics, farmers' organizations, cotton exchanges *et al.*, it may seem too simple to be effective. To the writer, who has given corporate matters attention, the plan seems capable of being worked out without infringing upon good business methods; indeed, we can see no reason for hesitating at this, any more than refusing to recognize the success of great railroad corporations, steel companies and other similar enterprises,

The great object in view is to finance, to market, the cotton crop; not to hold cotton for abnormal prices or for the benefit of any combination, but to finance it for the sole purpose of permitting the crop to find its way from the cotton field to the spindle in a natural way unhampered by the acts or misfortunes of any one.

The results, obtainable by putting this plan into concrete form and force will enable the farmer not wishing to sell in the fall to warehouse his crop, and he will be furnished with certificates showing grade, kind, etc., of cotton so stored or if he sells to his banker or merchant these cotton certificates can be held by the banker or merchant, they stepping into line in the place vacated by the distressed producer. These cotton certificates, each backed and secured by a bale of cotton of known weight and grade, the whole guaranteed by a bond of ample magnitude and strength, become at once a circulating medium, a species of speculation, a means of saving, which the man of business anywhere in the world must recognize. No government bond is safer. If the cotton burns, the insurance companies pay for it; if it does not burn, the world needs it and must have it at a substantial price above the cost of production.

It is absurd to reason that the producer must be ground down by growing cotton for a price below profit, that the world elsewhere may buy manufactured goods at a price pleasing and economical. Nor is it imperative the producer should live in poverty all his days that the spinner may earn huge dividends for his stockholders. The man and woman the world over pays the bill, and if they cannot, then it is best to study the profits made by spinners as compared with profits made by growers and see if something cannot be done for the real benefit of the southern planter.

The successfully carried out plan for financing cotton is of interest to every person in the land because the people who wear cotton pay the bill. The time is not far distant when some one man or some party of business men will hit upon a plan for financing, hence for marketing, the crop, not with the view of using the product as a great monopoly, but as a staple of rare value demanded by the people of the world after it has gone through the necessary processes of manufacturing. The world needs it; the spinner is an agency acting in an important capacity between the producer and the wearer of cotton and must of course be paid a profit for the labor he performs.

An Appreciation

Appreciating the public spirit and sound business judgment of those aiding in the early stages of this great need by subscribing to the promotion or expense fund, it is suggested that all such public spirited men be reimbursed from the stock of the main or principal company at fifty cents on the dollar, stock selling at par, to the extent of the sum subscribed, and that their names be engraved in such a way and manner as to become a part of the undying history of the world's greatest achievements. The project is of such magnitude that men of courage in business and finance seem to look upon it as something almost beyond and above human agency, else surely it would have been financed ere this; yet when the plan is perfected it will seem simple and comprehensive, such as mark the conduct of all other grand enterprises.

When the cotton crop is marketed with system, the saving to the South of from \$200,000,000 to \$300,000,000 annually will aid materially in putting all its industries, farming, commercial, manufacturing and banking, on a much more satisfactory basis, hence the South's business man is interested or will be as soon as he can be made to look at this great question in a business-like manner.

The writer has given this question thought from time to time, and knowing the gigantic undertaking involved has tried to strip it of all ambiguities with the object in view of encouraging men to consider the problem in the light of a purely business undertaking. The attention of every loyal southern man, banker, merchant, professional man and planter is called to the mighty subject with the hope that some day a convention of business men will be called to consider the ways and means for giving to the cotton belt new and greater significance by carrying out a plan for rescuing the planter from the grasp of intensely organized interests seeking the beautiful white cotton boll, the emblem of the South.

THE SUGAR CANE INDUSTRY

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The sugar cane industry constitutes one of the staple agricultural resources of the southern Gulf States. Not only this region but all of the southern states are under the financial and economic tension of phenomenal industrial growth and evolution. This is having the effect of diversifying production and enlarging the facilities for distribution. The construction operations of the cities and towns rival in vigor the cultivation operations of the country, and the rush is on for the vantage ground between domestic and visiting capital. Obviously, the situation is peculiarly interesting both to the combatant and to the onlooker. We shall hope to inspire some interest in the consideration of the position sugar cane is to hold in the economic struggle.

Experimental Stage

Although commerce is an impartial master, with a keen perception of the most profitable, the industry of long establishment possesses certain advantages of priority which make supplanting more difficult than in the case of new industries. The exact date of the introduction of sugar cane into the American colonies cannot be affirmed with accuracy, but the plants were grown successfully in Georgia and Louisiana prior to 1760. The cultivation was discouraged by the parent governments in favor of its more profitable cultivation on the islands of the Atlantic, and the early experimenters experienced great difficulty in obtaining sugar from the extracted cane juice. In 1791 Don Antonio Mendez imported a sugar maker from Cuba, and successfully converted his crop of that year into sugar. Etienne de Bore purchased cane from Mendez, and began to plant on a larger scale than had yet been attempted. In 1794 he sold the sugar from his crop for \$12,000, which excited the hopes of the struggling settlers of Louisiana more than if a

bonanza diamond mine had been discovered. At this time only the creole variety was in cultivation, and it was not suited to the soil and climate of the Gulf coast. The Tahiti variety was introduced from St. Domingo in 1797, but it proved little better than the creole. During the succeeding years sugar houses increased in number in Georgia and Louisiana, but not rapidly, since the varieties were so ill-adapted as to make indigo, rice and cotton successful competing crops. The industry was greatly depressed by the war of 1812, and, fortunately for the sugar industry in America, the purple and striped varieties from Java were introduced into Georgia in 1814. It remained for Louisiana to utilize the valuable acquisition, which began with the introduction of the purple or ribbon cane into that state in 1820, by John Coiron. The industry now passed from a stage of doubtful perpetuation to that of economic and commercial establishment. As in the case of all industries of manufacture, it has been, and is, subject to periods of revival and decline. From 1830 to 1835 the cultivation declined in Georgia and Florida on account of the advance in the price of cotton and rice, and the decline in the price of sugar; but the cane crop had gained a headway in Louisiana which made it less responsive to minor fluctuations on the market.

The successful utilization of slave labor in the cultivation of the crop was a significant factor in the development of the sugar industry in Louisiana. By 1828 slave labor was producing more than half of the world's sugar, and practically all of the Louisiana output. The production in Louisiana increased rapidly, reaching 177,000 tons in 1855, which made it not only the largest, but the chief source of revenue.

That the Civil War paralyzed this and all other southern industries, is so well known as not to need amplifying. The total production in 1865 was scarcely 5,000 tons, and the sugar industry was rehabilitated very slowly and against great odds, as evidenced by the production in 1875 only aggregating 60,000 tons. Twenty-five years elapsed, following the closing year of the war, until it regained the status of 1860. Not only was the labor supply in the person of the freed Negroes so thoroughly disorganized as to be almost worthless, but the sensational advance in the price of cotton set the whole gulf coast aflame with a cotton growing boom. The cane industry had to establish itself on different economic lines,

TABLE I.
RELATIVE STATUS OF THE SOUTHERN STATES IN THE PRODUCTION OF SUGAR CANE, 1850-1908.

STATES	1850		1870		1890		1900		1907-8	
	Sugar in Tons (2200lbs.)	Molasses and Syrup in Gallons	Sugar in Tons (2200lbs.)	Molasses and Syrup in Gallons	Sugar in Tons (2200lbs.)	Molasses and Syrup in Gallons	Sugar in Tons (2200lbs.)	Molasses and Syrup in Gallons	Sugar in Tons (2200lbs.)	Molasses and Syrup in Gallons
Louisiana.....	102,727	10,931,177	36,684	4,585,150	132,774	14,341,081	145,075	14,184,733	335,000	.....
Texas.....	3,341	441,638	918	246,062	2,491	2,159,339	1,267	987,587	11,818	.....
Florida.....	2,250	352,893	432	344,339	769	1,441,744	129	1,687,452	3	2,398,000
Georgia.....	746	216,150	292	553,192	594	3,223,194	103	3,226,367	.....	.....
South Carolina.....	304	15,004	479	436,882	99	386,615	44	805,064	.....	.....
Mississippi.....	176	18,318	22	152,164	30	1,524,024	8	1,413,219	.....	.....
Alabama.....	3,746	83,428	14	166,009	177	2,333,231	6	2,672,438	.....	.....
Arkansas.....	.....	18	41	72,008	.....	.....	0	44,819	.....	.....
North Carolina.....	.....	704	15	33,888	.....	.....	.....	1,057	.....	.....
Tennessee.....	112	.....	640	.....	.....	.....	.....	.....	.....	.....

*1903-06.

which, though slow in materialization, ultimately resulted in the introduction of improved methods of cultivation, manufacture and marketing.

The Sugar Cane Belt

Our southern coastal states represent the northern limit of the productive cane belt in the new world. Cane is a native of the tropics, and though it has a wide geographic range north and south of the equator, its requirements are so imperative and specific as to delimit the area of profitable cultivation. The following may be enumerated as the more essential requisites: a seven to nine months' growing season of warm days and prevailingly warm nights; a rainfall or irrigation supply amounting to thirty to fifty inches during the growing season; and a comparatively dry autumn for the maturing stage and the harvesting season. These conditions are usually supplied by eastern South Carolina, eastern and southern Georgia, Florida, Louisiana, southern Alabama, and southern and eastern Texas. It is estimated by the Louisiana Experimental Station that Louisiana contains at least 10,000,000 acres adapted to the profitable cultivation of cane. The crop thrives best on fertile alluvial loams which contain large quantities of decayed vegetable matter. These soils are also very productive of rice, cotton, and vegetables, and the profits from these products are increasing each year. The cultivation of cane on a commercial scale for the manufacture of sugar is confined to Louisiana and Texas, although small quantities of cane sugar are manufactured in Florida, Georgia, and South Carolina.

LOUISIANA.—Louisiana has naturally taken the lead in experimental work, being the only state in which the crop was a conspicuous source of wealth. The results have been gratifying, not only in largely supplanting the old crude and wasteful methods in vogue in the state, but in the educational value which is shared to a greater or less degree by the cane-growing countries of the world. With the placing of the industry on a more economical basis of operation has come a reduction in the number of plants. In 1850 there were 1,490 sugar houses in operation in the state for the manufacture of 154,000 tons of sugar; as compared with 200 factories in 1908, which produced 335,000 tons of sugar. Additional products from the 1908 crop were 540,581 barrels (fifty gallons)

of molasses, and 36,532 barrels of syrup. Louisiana reports a total of 4,730,148 acres in cultivation, of which 401,461 acres are in cane; as compared with 1,845,330 acres in cotton, 1,537,135 acres in corn, and 373,866 acres in rice, which are the most important competing crops with sugar cane.

The delta parishes situated west of New Orleans constitute the intensive cane belt of Louisiana, and in the northern half of the state but little cane is grown. St. Mary's Parish leads with 85,577 acres; Iberia is second, 40,000 acres; Assumption, third, 35,655 acres; and Lafourche, fourth, 33,000 acres. It is interesting to observe that Calcasieu, the parish which has more than one-third of the total rice acreage, has only 480 acres in cane cultivation.

The refining industry is now being established at New Orleans on a large scale, which should result in placing the raw sugar market on a more stable basis. One of the largest refineries in the country has just been completed by the American Sugar Refining Company, designed not only for handling the domestic supply, but also for the sugar imported from Cuba, Mexico and South America.

TEXAS.—The cane sugar industry has fluctuated more in Texas than in any other state, but the past decade has been a period of phenomenal and unprecedented development, the output having increased from 1,394 tons in 1899 to 12,000 tons in 1908. The lower valley of the Brazos River is the region in which cultivation is being concentrated, with Fort Bend County as the largest producer. The season in Texas is of sufficient length to mature and harvest cane in a coastal belt from seventy-five to one hundred miles in width. More varied economic conditions are operative in this coastal region than elsewhere. Rice, which twenty years ago was only grown experimentally, has become one of the largest crops of the Sabine Valley. Although the coast region is not the intensive cotton belt, cotton is cultivated in all of the coastal counties; and as Texas has increased her cotton production more rapidly than any other state, this part of the state has felt the vigor of the cotton exploiting. The rapid increase in the city population has also had significant influence on the production, particularly of vegetables and small fruits, for which this part of Texas is so well suited. The shipping facilities have been improved and enlarged simultaneously, making possible a diversified production which formerly would have been unprofitable. In the light of these facts and prospects, the continued increase in the cane production of Texas is by no means assured.

FLORIDA.—Cane is cultivated in all parts of Florida in small areas, aggregating 7,307 acres, but is utilized only for the manufacture of syrup. The sugar content is two to four per cent higher than in the Louisiana cane. The failure to develop the sugar cane industry on a commercial scale is because the soil and climate of the southern half of the state are so well adapted to the profitable production of early fruits and vegetables; while the climate and soil of the northern counties are equally well adapted to cotton, corn and peanuts. The latter demand less operating capital, and involve fewer labor complications.

ALABAMA.—That part of Alabama south of the thirty-second parallel has an average annual temperature of sixty-five degrees, and a growing season of not less than seven months. All fertile soils in this belt yield a luxuriant crop of sugar cane, and because of the prevailingly better drainage conditions than exist in the Mississippi delta region, it gives a higher average percentage of sugar. Although cane is not cultivated in the state for the commercial manufacture of sugar—the total output being less than ten tons—more than thirty thousand acres are utilized for the manufacture of syrup. The acreage is widely distributed, the purpose of the crop being chiefly to supply the domestic demand.

SOUTH CAROLINA.—The sugar cane industry has declined in South Carolina, as evidenced by the figures of Table I. The counties bordering the lower Savannah—Hampton, Boonwell and Aiken—are adapted in soil and climatic conditions to the production of cane comparable to the best in Louisiana both in tonnage and sugar yield. Cotton and rice are the cane-supplanting crops in this region, and economically so, because of the rise in the price of these commodities during the past two decades, while sugar has in general declined.

From Field to Factory

Planting.—Both autumn and spring planting are practiced in the South. On large plantations it begins in September, and is continued until the harvesting season of November and December, following which the harvested area will be planted as soon as practicable. Spring planting begins in early March and continues into April. Propagation is effected by covering the stubble, and by planting cane stalks selected and reserved for the purpose.

Seedling canes have been introduced for experimentation, but have not passed beyond this stage.

Cultivation.—The early cultivation is the most important, the most tedious, and the most expensive. Neglect at this stage means disaster, cane being a weak competitor with weeds in a free-handed fight. Since the extermination of weeds is the chief aim, the cultivations are shallow and frequent, and much of the labor must be done by the hand and hoe. The soil moisture is at the same time conserved for the larger demands in prospect. The next stage follows thinning, when the cane begins to reveal its identity as a giant of the grass family. Deeper plowing is effected by disc cultivators, which admit a deeper ventilation, and are so set as to throw the soil to the cane row. The latter is important not only to cover the weeds in the cane row, but to facilitate drainage and give the cane a deeper rooting. The crop should have the last cultivation from the first to the fifteenth of July. When cultivation is discontinued the growth is rapid, if the season is favorable. The length of the growing season is determined by the climatic conditions, the time of planting, the variety of cane, and the amount of space allotted to each parent stalk. August and September are the important maturing months in the United States. During this period the canals used for conveying the nutrition charged waters from the roots to the leaves become less active, and the sieve tubes which convey the nutrition from the leaves downward to the stalks become more active. A dry season is favorable during the last stages of maturing, as a part of the water contained in the plant is consumed to meet the deficiency of soil moisture, which leaves the sap correspondingly richer in sugar. As the plant approaches maturity, the joints change from a green to some shade of red, and the stalks begin to shed their leaves from the bottom. In the Gulf states the crop is not ready for harvesting until four to six weeks after the beginning of the change in color.

Harvesting.—Although the harvesting begins in October on the large plantations, because of the time required for harvesting and the apprehension of unfavorable weather, it is not in the best condition until November. The cutting is done almost exclusively by hand, since no satisfactory machine for harvesting cane has yet been invented. A strong laborer can cut and handle no more than three to four tons per day, which obviously makes a heavy demand for labor

during this season. The transportation of the cane from the field to the mill or factory presents many difficulties to the large grower because of the tonnage to be handled, and to the small grower because of the distance involved. The cane is conveyed from the field almost entirely by wagons, which are in general loaded by hand. Derrick hoists and gasoline power loaders are being introduced on a few plantations. The unloading at the mill was formerly done by hand, but in all of the large plants the cane is handled by machinery from the loaded wagons or carts to the mill.

Cost of Production

This naturally varies for different years, and in different localities for the same year. The reserve of seed cane represents a heavy initial cost, since a minimum of three tons per acre is required, or about one-fifth of the average crop. This could be milled at less cost than the "windrowing" for winter preservation, so at present mill prices it represents an outlay of twelve to sixteen dollars. In 1899, 3,870 farms in Louisiana, on which cane was the chief source of income, reported that the expenditures for labor and fertilizer amounted to forty-five per cent of the gross income. On the liberal estimate of sixteen tons per acre and four dollars per ton, the average cost of the labor and fertilizer was \$28.80 per acre, leaving \$35.20 to cover cost of seeding, risks, rental or interest charges, repairs, horse power and profits. The risk from storm losses is great, since the cane belt is in the zone of our most violent coastal storms. The total loss to the sugar cane crop of Louisiana from the storm of September 20, 1909, is estimated at 2.89 per cent (\$650,000) by Professor H. P. Agee, of the State Experimental Station. The losses in the Mississippi and Yazoo delta districts varied from ten to twenty per cent, and in Texas from eleven to twenty-five per cent. The shallow rooting of cane and the weight and brittleness of the stalk make destructive not only windstorms but heavy or continued rains.

The cost of labor has so increased during the past two decades that the industry would have declined but for the economies inaugurated in the different stages of production. From 1890 to 1900 the cost of unskilled farm labor in the cane-growing states increased from twenty to thirty per cent, while the price of granulated sugar declined from 6.3 per pound (1890) to 5.3 cents. From 1900 to

1909 wages increased more than twenty per cent, and granulated sugar declined from 5.3 cents per pound to 4.68. According to the statement of conservative planters the cost of producing raw cane sugar somewhat exceeds two and one-half cents per pound, and under the present economic conditions a reasonable profit cannot be realized unless the factory price averages two and one-half to three and one-half cents per pound for the different grades of raw sugar. The cost of factory equipment is estimated at \$250 for each ton of cane which can be milled per day; that is, a factory of 2,000 tons daily capacity would cost \$500,000.

Improvements

The progress in efficiency of manufacture has been more pronounced than in method of cultivation. When the application of the steam, vacuum-pan process was first introduced in 1845, fifty pounds of raw sugar was an average yield from a ton of cane, as compared with 165 pounds per ton from a well-equipped factory to-day. The old "open kettle" is an heirloom of a generation and economic period passed, but surviving to the extent to link it with the present. There has been a general improvement in the preparation of the land for the crop. This has come under the pressure of necessity and intelligent guidance. The state experimental stations of the cane-growing states have been active in their investigations, and co-operatively helpful in their results. The adaptation and application of fertilizers and the relative merits of cane varieties are the research lines which have been pursued with greatest assiduity. With the acquirement of more complete laboratory equipment the technical problems of manufacturing processes and by-product utilization are now being investigated by trained scientists and expert operatives.

The necessity of the situation in the exhaustion of soil fertility and the accompanying decrease in the yield helped the planter to the response of a listening ear and a willing hand. Much has also been accomplished in the way of reclamation by drainage and intensification by irrigation. Much more remains to be done. The lands in the southern coast region have not been developed to a market value which inspires extensive reclamation of the most approved permanent type. The most encouraging hope is that the federal government will take the initiative which has been shown in the reclamation service in the arid West.

The cane belt has no greater need than the general introduction and practice of diversified agriculture, or the judicious rotation of crops. As astounding and unnatural as it may seem, the one crop system is still in vogue, not only in a large part of the cane belt but also in the cotton growing regions. We can take courage since diversified production has gained ground more rapidly during the past five years. Intelligence, decrease in the "one crop" yield, and misfortune are driving the issue. The delta planters stood unmoved until the sixty per cent cane crop of 1898, and the subsequent arrival of the boll weevil. One planter in the Yazoo delta writes that the boll weevil did not strike him until last year, but succeeded in reducing his cotton crop from \$35,000 to \$11,000; and that, as a result, he has under cultivation this year thirty acres of cotton, compared with 700 last year, three hundred acres of corn and fifty acres of broom corn.

The adoption of diversified agriculture will have the effect of decentralizing the sugar-cane industry, of increasing the acreage yield, and of so fostering home industries—agricultural and manufacturing—as to lessen the risks and ameliorate the losses from adverse weather conditions, insect blight, and market depressions.

The pioneer stage of most industries has been noted for crudeness of methods and waste of products or by-products. The sugar industry is no exception. The low grade molasses, which is a by-product from sugar manufacture, was considered almost worthless, and in consequence was either discarded or sold at a very low price. It contains about fifty per cent of sugar, but also impurities which make the taste objectionable to man. Although the mules sometimes had to be driven from the vats, the value of low grade molasses as a stock food was not commercially recognized in the United States until recent years. Now it is prepared in a variety of mixtures, and is worth on the market \$20.00 per ton. The part fed in the South is usually mixed with cotton-seed meal, or oil cake, and cut forage—either hay, corn fodder, or sorghum.

Competition

Within the memory of many cane growers and sugar makers still living, sugar cane was king in the sugar realm. Only twenty years ago cane sugar constituted two-thirds of the world supply, while now it is a little less than one-half. Cane still supplies ninety

per cent of the sugar consumed in the United States, since ninety-three per cent of the sugar import is from cane-growing countries, and the United States imports approximately four-fifths of all sugar consumed. Excepting the crop of British India and China, we consume sixty per cent of the world's sugar manufactured from cane.

The nature of the competition to which the domestic cane sugar crop must adjust itself is somewhat complicated. The economic competition within the belt has been mentioned, and this is destined to become more exacting in its demands, proportionate to the development of diversified industries. The competition of the cane sugar production in Cuba, Hawaii and the Philippines is vigorous, both on account of the production and the dissimilar economic conditions which prevail in those countries. Herein lies the most commanding price fixing power, which is further augmented by the sugar trusts—the price manipulators. Since the wage scale is rising in each of these countries as rapidly as in the United States, there seems to be no reason for alarm, lest this competition should assume a prohibitory character. Almost one-half of the total sugar import in the United States is from Cuba. Since sugar can be produced there at a cost of two cents per pound, it is probable that our cane sugar production would be materially influenced, were sugar admitted duty free.

The competition with domestic beet sugar is not so close as with the tropical producing countries, and the tariff on refined sugar practically eliminates competition with the sugar beet countries of Europe. The cost of unskilled labor in the important beet growing states is somewhat higher than in the cane growing states, but there is little difference in the final cost of producing refined sugar from the two sugar plants. The sugar yield from one ton of beets varies from 270 pounds in California to 200 pounds in Kansas, Nebraska, Minnesota and Montana; and the average acreage yield of beets varies from ten tons in Colorado to six tons in Illinois. The average acreage yield of cane is about sixteen tons, which produce an average of 160 pounds of sugar per ton. From these figures it is obvious that the excess tonnage of cane is about balanced by the excess sugar content extractible from beets. The following reasons lead us to the conclusion that the progress of the sugar cane industry in the humid Southern States will not be

repressed by the beet sugar industry, which is confined largely to the arid and semi-arid states: First, the price of land under irrigation is increasing rapidly; second, diversified farming is being rapidly introduced on economic lines productive of the largest profits; and third, the increased demand for a larger number and more efficient laborers is steadily raising the scale of wages, which is already forty per cent higher than in the cane-growing states.

THE DECADENCE OF THE PLANTATION SYSTEM¹

BY ULRICH B. PHILLIPS,

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The sinister prominence of slavery and Negro controversies has long obscured the historical importance of the plantation system. That system was as essential a correlative to the institution of slavery as the southern white man has been to the southern Negro. It, indeed, was less dependent upon slavery than slavery was upon it; and the plantation régime has persisted on a considerable scale to the present day in spite of the destruction of slavery a half century since. The plantation system formed, so to speak, the industrial and social frame of government in the black-belt communities, while slavery was a code of written laws enacted for the furtherance of that system's purposes. Since the overthrow of slavery, the present or former plantation communities have had to provide new laws and customs for the adjustment of employers and employees. In some localities these new codes have centered about the historic plantation system; in others the old régime has been almost completely discarded and the present adjustments have grown up *de novo*. Its concentration of labor under skilled management made the plantation system, with its overseers, foremen, blacksmiths, carpenters, hostlers, cooks, nurses, plow-hands and hoe-hands, practically the factory system applied to agriculture. Since the replacement of domestic manufacturing by the factory has become established in history as the industrial revolution, the counter replacement of the plantation system by peasant farming or other decentralized types of rural industry seems to require description as an industrial counter-revolution. That this counter-revolution has not wrought such havoc in the South as it did in Jamaica and Hayti is at the same time a cause for warm congratulation and an evidence of the greater vigor, adaptability and resourcefulness of both the white and Negro elements of our continental population.

¹A paper read in substance at the initial meeting of the Tulane Society of Economics, New Orleans, La., January 12, 1909.

To enumerate its achievements, whether good or bad: the plantation system furnished an early means of large-scale prosperity, and made America attractive to high-grade captains of industry; in colonial Virginia and Maryland it imported under indentures great numbers of white servants, who soon worked out their terms of service and became independent yeomen; it imported great numbers of Negroes in slavery into all the southern colonies, gave them discipline and instruction, and spread them through all the districts where the soil, climate and facilities for transportation were good for producing and marketing tobacco, rice, indigo, sugar or cotton; it thereby crowded many of the yeomen whites out of the staple districts and drove them away to the mountains or the pine-barrens, or to the great non-slaveholding northwest; it kept, on the other hand, a large element of the southern whites in fairly close and fairly friendly association with the Negroes, and in considerable degree welded the two races into one community; it certainly shaped the views and tradition of nearly all elements of the southern population; and it controlled the public policy of numerous states and in large measure that of the United States government. It was so thoroughly dominant in all the districts where staple production prevailed that few there questioned its thorough and lasting efficacy and expediency.

The plantation system provided for the steady employment of labor, mainly in gangs and in routine tasks, for the large-scale production of the staple crops. It utilized crude labor, and it depended upon fairly cheap and abundant labor for its maintenance. The economic strength of the system depended in large degree upon the ability of the planters to direct the energies of the laborers on hand to better effect than each laborer could direct his own energies in isolation. Now, when steam power and machinery are not in question, large units of industry are more efficient than small ones only in cases where the work may be reduced to a steady routine. In truck-farming, dairying, cereal production, when there are long lay-by intervals to be filled economically with odd jobs, and in most sorts of frontier industry, there are positive requirements of versatility and reliability on the part of the laborers; and in these cases no amount of knowledge and will-power on the part of a large-scale employer can make up for a deficiency in the necessary qualities on the part of his employees. Therefore the planta-

tion system, with its crude type of labor, was clearly debarred from these enterprises. The five great southern staples became plantation staples because each of them permitted long-continued routine work in their production. The nature of their system and their labor supply, in fact, made the planters depend upon their respective staples to a degree which proved a positive vice in the long run and eventually created a need for economic reform if not of actual revolution.

The plantation system was highly excellent for its primary and principal purpose of employing the available low-grade labor supply to serviceable ends; and also in giving industrial education to the laboring population, in promoting certain moral virtues, and in spreading the amenities. On the other hand, like other capitalistic systems, it sadly restricted the opportunity of such men as were of better industrial quality than was required for the field gangs, yet could not control the capital required to make themselves captains of industry. The prevalence of the plantation régime stratified industrial society, and society in general, to a greater degree than was expedient for developing the greatest resources and power from the population on hand. In particular, while it utilized the productive strength of the Negro population to excellent effect, it substantially discouraged the non-planter whites and thereby reduced their service to the world and to themselves. Furthermore, to say the least, it did not check the American disposition, born of the wilderness environment, to skim the fields and waste the natural fertility. Worst of all, perhaps, the predominance of the system hindered all diversification in southern industry, and kept the whole community in a state of commercial dependence upon the North and Europe like that of any normal colony upon its mother country. The ante-bellum South achieved no industrial complexity, and its several interests were deprived of any advantage from economic interdependence and mutual gain from mutual satisfaction of wants. Whereas the settlement of Ohio proved of great benefit to New York and Pennsylvania by extending the demand for their manufactures and swelling the volume of their commerce, the settlement of Alabama yielded no economic benefit to Virginia, and was of actual detriment to South Carolina, because of its flooding the world's market with the same fleecy staple upon which that older community, with its partially exhausted lands, continued to depend for prosperity.

In the ante-bellum régime in the black belts, unfortunately, the plantation system was in most cases not only the beginning of the development, but its end as well. The system led normally to nothing else. If a large number of planters had customarily educated a large proportion of their laborers into fitness for better things than gang work, the skilled occupations on the plantations would have been glutted and the superior ability of the laborers in large degree wasted. This was the fault of slavery as well as of the plantation system. Slavery, or in other words, the capitalization of labor control, was also responsible for the calamitous fact that the ante-bellum planters were involved in a cut-throat competition in buying labor and in selling produce. These shortcomings impaired the industrial efficiency of the southern community, and, at the same time, prevented that community from securing the full normal earnings from such productive efficiency as it did achieve.

If no cataclysm of war and false reconstruction had accompanied the displacement of slavery, the plantation system might well have experienced something of a happy further progress with free wage-earning labor. The increase of its service to the community would have required some provision whereby such laborers as the system had schooled into superior efficiency might easily withdraw from the gangs and set themselves up as independent artisans, merchants or farmers. The gangs must graduate at least the ablest of their laborers into the industrial democracy, and the régime must permit small farms, factories and cities to flourish in the same districts as the plantations. In a word, for the best economic results, industrial resources and the industrial mechanism of society must be made varied, complex and elastic, and every distinctly capable member of the community must be permitted to find his own suitable employment. On the other hand, wherever there is a large element of the population deficient in industrial talents and economic motives, as a great number of the southern Negroes still are, it is desirable for the sake of order and general prosperity that the inefficient and unstable element be provided with firm control and skilled management. The historic southern system met this particular need more successfully than any other device yet brought to the world's knowledge. The remodeling and partial replacement of that system was necessary in the progress of industrial society. The extent of its decadence can hardly be measured at the present day, since the United

States census figures are entirely misleading in the premises and the character and tendencies of the numerous rural industrial adjustments which have arisen in the latter-day South can hardly be estimated without more elaborate study than has yet been made in the field. But it seems fairly safe to conclude that retention of the plantation system in some form or other, in suitable districts and for the proper elements of the population, is fortunate at the present day and both expedient and inevitable for a long period in the future, as one among the bases of adjustment in southern industrial society.

AGRICULTURAL REVOLUTION A NECESSITY

BY CLARENCE H. POE,
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Thirty years ago and more, that great-hearted and far-seeing Southern poet, Sidney Lanier, gave us the keynote of Southern development in a paragraph that every Southern schoolboy ought to learn by heart:

"A vital revolution in the farming economy of the South, if it is actually occurring, is necessarily carrying with it all future Southern politics, and Southern relations, and Southern art, and such an agricultural change is the one substantial fact upon which any really New South can be predicated."

It is Lanier's old message that I would now bring to my readers, and yet I bring a new message too: that at last we have definitely set about the fulfilment of his dream. To tell what this means to the South and to the nation, and to arouse, if possible, more earnest support in carrying it to success, is the object with which I shall write. As the background of my story and in order that we may see its large meaning in the right perspective, I must first of all call attention to two statistical facts:

(1) The overwhelming predominance of rural interests in the South, the census shows that more than eighty per cent of our population is rural, and that the South is to-day the one section of America of which it is true that there are more people engaged in agriculture than in all other occupations combined.

(2) The efficiency and earning power of these people heretofore. The last census showing the average annual value of products per farm in the North Atlantic states as \$984, in the South Atlantic as \$484, or exactly \$500 per year less in South Atlantic than in North Atlantic; in the North Central states as \$1,074; in the South Central, \$536, or \$538 per year less in South Central than in North Central.

With this as my basis, I am ready to lay down three or four propositions which I wish to drive home to my readers.

1. To bring up its earning power \$500 more a year for each Southern farm is the supreme task and opportunity of our generation.

2. It is not only our supreme task and ambition, but it is a realizable ideal, a workable, practicable program of progress.

3. It is not only our supreme task, and a realizable one, but one upon the success of which depends the prosperity not only of the South as a section and Southerners as a whole, but also, and more important, the prosperity of every individual Southerner—the farmer no more than the banker, the merchant, the railroad man, the lawyer, the preacher, the teacher, the statesman. The prosperity of every trade, art, and craft in a community and the prosperity of every individual in the community, from the boy on the street who blacks your shoes to the master mind who organizes your railway systems or governs your state—the prosperity of every man, I say, depends upon the prosperity of the average man, this average man in the South being a farmer—and this is the greatest truth that I hope to bring out in this paper.

4. Then the hopeful fact that already earnest men and women, working here and there in different lines of endeavor have developed almost unawares the several component parts of a fairly comprehensive and well-rounded scheme of rural development, a primary and essential part of which is this getting \$500 more a year farming in the Southern States—a scheme of education which embraces young and old, not only the farm boy in the school, but the adult farmer and the farmer's wife as well.

Commercial Significance

As a spokesman of the South's agricultural interests, I am going to base my argument not on any plea as to what this rural development will mean to the South as a section or to Southerners as a whole, but upon what it will mean to the individual. My hope is to show that the prosperity of each individual Southerner is dependent upon the prosperity of the average man in the South, this average man, I repeat, being a farmer. Too long a large element of our people have cherished a different feeling. Too long—tragically too long—men have thought or said: "If I am a merchant,

lawyer, manufacturer, preacher, railway man, banker or teacher, it matters little to me, except, of course, as a matter of altruism or benevolence, whether agriculture prospers or not, whether the man in the field is ignorant or educated, is progressing or retrogressing, is prospering or suffering."

This is the feeling that has cost the South leadership. This is the sentiment that has kept our manufactures, our commerce, our literature, our education—that has kept one and all of these chained down to the unprofitable level of our unprofitable average man, our man behind the plow. Increase his earning capacity and you increase the earning capacity of every other worker in the South; free him from the claims of unprofitable because misdirected labor, and you cut the hindering shackles of every other worthy interest in the Southern States. If our statesmen and public men in the South these last thirty years could only have realized the fundamental truth in Lanier's utterance! If they only could have realized that the prosperity of every man depends upon the prosperity of the average man!

I do not know whether or not it has ever been worked out as a principle of political economy, but it is unquestionably true that wealth is by nature not aristocratic, but democratic. The poorer every other man is, the poorer you are. The richer every other man is, the richer you are. Every man whose earning power is below par, below normal, is a burden on the community; he drags down the whole level of life, and every other man in the community is poorer by reason of his presence, whether he be white man, or Negro, or what not. Your untrained, inefficient man is not only a poverty-breeder for himself, but the contagion of it curses every man in the community that is guilty of leaving him untrained. The law of changeless justice decrees that you must rise or fall, decline or prosper with your neighbor. You will be richer for his wealth, poorer for his poverty. So to-day every man in the South who is tilling an acre of land so that it produces only half as much as intelligently-directed labor would get out of it, is a burden on the community, is dragging down the level of life for every other man in the community. Suppose you are his fellow-citizen; then because of his inefficiency, his poverty, because of his failure to contribute to public funds and public movements, you must have poorer roads, poorer schools, a meaner school-house and court-house, a

shabbier church, lower priced lands; your teacher will be more poorly paid, your preacher's salary will be smaller, your newspaper will have a smaller circulation, your town will have a poorer market, your railroad smaller traffic, your merchant smaller trade, your bank smaller deposits, your manufacturer diminished patronage, and so on and so on.

Negro Efficiency and Immigration

The ramifications are infinite, unending. The doctrine is true whatever the color of the man. The ignorant Negro in the South to-day is a great economic burden, and as a rule states and communities are prospering in proportion to their white population. I do not know what we are going to do with the Negro. I do know that we must either frame a scheme of education and training that will keep him from dragging down the whole level of life in the South, that will make him more efficient, a prosperity maker and not a poverty-breeder or else he will leave our farms and give way to the white immigrant. No acre of land will long own as its master, the man or the race who mistreats it and makes it unfruitful. It is a fatal misconception that the South can be helped or that any southern industry can be helped by having the Negro ignorant or poor. Our greatest need to-day is for more intelligent and better trained labor, and we must either have the Negro trained or we must not have him at all. Untrained, he is a burden on us all. Better a million acres of untilled land than a million acres of mistilled land.

Let us remember then that our economic law knows no color line. White or black, the man whose efficiency is above par, economically considered, is a help; white or black, the man whose efficiency is below par is a hindrance.

Of all our errors here in the South our greatest has been the failure to recognize the fact that the prosperity of every man depends upon the prosperity of the average man—and in many cases the actual acceptance of the doctrine that the state is benefited by having cheap, untrained labor. We now see, on the contrary, that such labor is a curse. Our second great error has been like unto it—the belief that even if the prosperity of every man does depend upon the prosperity of the average man, we are too poor to train him. The truth is that we are too poor not to do so.

The fullest and freest training of the average man is the one and only positive guarantee of Southern prosperity. By this I mean the prosperity not only of our section, and of our institutions, and of society as a whole, but the prosperity of every individual—every farmer, laborer, merchant, manufacturer, and professional man; every inhabitant, as I have said, from the boy who blacks your shoes to the master mind that builds your railroad systems or governs your state. Having once accepted this doctrine concerning the average man—and the average man in the South being a farmer—we shall not be slow to put into effect that large and comprehensive program of rural development which earnest men and women, working in many different lines have gradually brought into shape—a program which looks to the ultimate doubling of the output and the more than quadrupling of the profits of that occupation which engages the attention of more people in the South than all other occupations combined.

Revolution Now Begun

Then indeed will the South blossom as the rose; then indeed will the old ambitions of our fathers come at last into glorious fruitage. Not only will the common farm homes in the South be supplied with all the conveniences our city brethren now enjoy, good roads and telephones, and fine stock and fat acres greet the glad eyes of an awakened people, but every industry known to our Southland will throb with new vigor as if fresh blood had been poured into its veins. Great mercantile houses will grow up among us rivaling those of the North and West, and southern merchants will make the big profits that come with big sales instead of the small profits inevitable with small sales. Merchants in the West are selling automobiles to farmers; compare, if you will, the profits on automobiles and ox-carts. Manufacturers of a thousand things for which there is now no profitable Southern market, we shall have; and our laboring men, finding room for greater skill and higher wages, will walk with quicker step and lighter hearts. Bankers will no longer own allegiance to other sections, but our own financial institutions will become the equals of any in America. Our newspapers will grow greater, with stronger subscription and advertising patronage, and northern men and women will begin to read southern magazines and southern dailies. Our railroads will double-track old

lines, to supply the new demands, and new lines will be built to quicken dead sections into life. Able lawyers will no longer go North to find big fees, foreign pulpits will no longer be able to take our strong religious leaders from us, our poet-souls and artist-souls will find here at last the atmosphere in which they best can flourish, our statesmen will speak with potent voices in the councils of the nation, and the eye of every Southern schoolboy will sparkle with a keener pride as he learns the story of a generation that has wrought as well in peace as the fathers fought in war. These are the things we have now set out to win; these are the things which are to come about with the agricultural revolution upon which alone any really New South can be predicated.

I have no time in this brief paper to speak in detail of the plans by which our five hundred dollars more a year per farm may be realized. Suffice it to say that we shall manage the land itself better, now more barbarously handled by Americans than by any other civilized people. Land is "wearing out" with us in ten, twenty, or thirty years, whereas I walked over lands in Europe which had been cultivated for centuries before our forefathers first heard that an Italian named Columbus had discovered a continent beyond the seas—and these lands now produce even bigger crops than then. We shall grow stock and so get two profits from land instead of one. We shall make more farm manures and so save millions a year on fertilizers. We shall use improved seed and improved stock, and very nearly double our profits through this one change. We shall use more horse-power instead of one-horse power. In a hundred other ways we shall improve the South's agricultural practice, bringing it up to Northern and Western standards and thereby to Northern and Western profits. By reading farm papers and keeping up with our experiment stations and agricultural leaders, the reader can learn the plans by which the reform is to be brought about; I have space here only to speak of the agencies to be used.

Agencies to Be Used

First of all, then, there is the school. We must double the energy we are putting into our great educational crusade. There is no time to dispute about the forms of education. We need more common school education, more high school education, more college education, more technical education, more classical education. But

without disparaging the college or the university, I would say that first of all, we must give greater attention to the public schools. It is in them that the farmer, the average man, gets his education. We cannot improve our farming until we educate our farmers; we cannot develop the South until we develop our Southerners.

Nor is it enough that we have longer public school terms; we must have better public schools. We must make them train for life, for practical things. Teach the farm boy how cotton and corn and tobacco may be improved by seed selection; how a plant feeds, and how soils are exhausted; what elements are found in common feed stuffs, and which make fat and which make muscle; which cows make money in the dairy, and which should be selected for beef—and a thousand other things. Not only should the elements of agriculture be a public school study in the rural districts, but there should be a revolution in the text-books for other studies. In your spelling-book, for instance, where do you find such words as nitrogen, potash, protein, or even such common farm words as clevis, single-tree, mattock, etc.? Made by city people for city people, the books and teaching have not been adapted to the needs of the country children. We shall take a long step forward when the farm boy has proportionately fewer problems in arithmetic about foreign exchange, and latitude and longitude and the metric system, and more about how to calculate a feeding ration for cows or a fertilizer formula for certain quantities of potash, phosphoric acid and nitrogen, and when he studies proportionately less about far-away Australia and Kamchatka, and more about the soil that he walks over and plows in every day of his life. The farmer girl, too, must learn of food values, of the chemistry of cooking, of hygiene, and of sanitation. Domestic science for the girls must go side by side with agriculture for the boys. Agricultural high schools will continue this work, and the agricultural college will carry the process still further for those who are to be leaders.

Much as the agricultural colleges, the agricultural high schools, and agriculturalized common schools, will do for the farmer, their good effects can hardly be seen until the next generation, but we cannot wait until the next generation for our deliverance. Fortunately for us, therefore, there are a dozen agencies which are educating the adult farmer, no less effectively than the schools are educating the farmer's boy.

Educating Grown-Up Farmers

Chief among these agencies, in my opinion, are the farm papers, the farmers' co-operative demonstration work, farmers' clubs and the farmers' institutes. The farm press of the South has doubled in efficiency in ten years, and the millions of pieces of literature it distributes yearly—practical farm experiences, clear-cut agricultural philosophy, the teachings of scientists and experimenters interpreted for the every-day farmer—this never-ceasing practice-school with its millions of working pupils makes a leaven that would of itself ultimately leaven the whole lump. But there are, as I have said, a dozen other agencies, all working to the same end, and each one of them deserves its share of praise.

The farmers' institutes are of the most far-reaching benefit, bringing as they do the agricultural leaders of each state face to face with the farmer, and not these leaders only, but often agricultural machinery, agricultural equipment, etc., which the farmer would not otherwise come to understand. Lately the scope of these institutes has been extended so as to include farmers' wives as well, and no branch of educational endeavor of which I know has brought greater results for the money and effort expended than just this.

Farmers' clubs are also doing an immensely useful work. Once we had farmers' organizations which studied politics chiefly; now we have the Farmers' Union with millions of members in the South whose chief object is to encourage scientific farming.

Perhaps, however, the most immediately effective plan ever originated for helping the southern farmer is through what is called the Farmers' Co-operative Demonstration Work—a plan of such patent merit that it is a wonder Adam did not think of it. As a matter of fact, however, it was begun but a few years ago by the National Department of Agriculture, is under the direction of Dr. Seaman A. Knapp, and the idea has since been adopted by more than one state department of agriculture. The plan is to have a strong man, a great agricultural leader like Dr. Knapp, at the head of the general movement. Then in each state the most successful and most progressive farmer who can be had is named as state agent. Similarly in each county or district, the best farmers join in as local agents—and so on, until hundreds and thousands of farmers are enthusiastically at work, each one acting under instructions from

the most progressive and successful farmer of his neighborhood. This system of helping the farmer is of inestimable benefit. Only a few weeks ago I saw a statement from Harrison County, Texas, signed by the leading bankers and business men, declaring that the work in the preceding twelve months alone has been worth \$100,000 to that one county. The obdurate farmer may scoff at learned bulletins, he may refuse to be "preached at" by farmers' institute lecturers, and he may ignore test farm experiments as "not practical," but he falls right into the ranks with the great forward movement of agricultural progress when a practical, money-making farmer of his own acquaintance becomes his captain—or rather his teacher, guiding his hand, as it were, while he learns to write the new and magical letters of science and profit upon his own soil.

Four Facts All Southerners Should Remember

1. Not only does the prosperity of the South as a whole depend upon the prosperity of the average southerner, but the well-being of every individual is measured by the efficiency of this average man. Inevitably we are poorer for his poverty, richer for his wealth.

2. The great majority of these common people of the South being farmers, Sidney Lanier was right when he declared that "an agricultural change is the one substantial fact upon which any really New South can be predicated."

3. The possibilities of "such an agricultural change" are indicated by the fact that the average value of products per farm for the South Atlantic states is \$500 less per year than for the North Atlantic, and for the South Central \$538 less than for the North Central.

4. This agricultural revolution can be brought about only by a better scheme of rural education—better both in quantity and quality; not only longer terms, but with a curriculum adapted to the needs of country children. This rural education, too, must not stop with the children, but must be carried on among farmers and farmers' wives, and land-owners, and tenants, and farm managers—all of these being educated as definitely as the schoolboy himself, by means of farmers' institutes, and agricultural colleges, and farm papers, and farmers' clubs, and demonstration work.

In fact, it is the one immediate and imperative duty of Southern citizenship, to see that in every state a comprehensive and well-rounded policy of rural development is inaugurated and prosecuted with unfailing earnestness—this being at once the most important and the most neglected resource of Southern progress.

NEW FARM CROPS FOR THE SOUTH

By S. M. TRACY,

United States Department of Agriculture, Washington, D. C.

Almost from its first settlement the South has been a "one-crop" country, and the cotton field was the sole reliance of the planter who knew very nearly how many bales would be made each season and just what labor could be depended upon from year to year. Now, however, the planters are confronted with a very serious problem in deciding what can be done to meet the changed conditions brought about by the advent of the cotton boll weevil and the consequent demoralization of the labor force. The old days when cotton was practically the only crop are gone forever, but new crops and new methods are being adopted with little loss or friction. While cotton will doubtless remain the staple crop of the South, and will continue to be a profitable crop under intelligent management, it will no longer be the only crop, and others are proving fully as remunerative.

The boll weevil has spread over about half of the cotton growing region. It is now sixteen years since it first attracted serious attention in Texas, but that state has now practically recovered from what seemed a fatal disaster; Louisiana has had them a shorter time but has accommodated herself to the change so readily that the present year has been one of the most profitable in her history. About one-half of Mississippi is infested, but the planters there have had such ample warning that they are well prepared for the change. In states farther east cotton is still the main crop and extremely profitable, but the planters in that section are fully aware of the fact that the weevil will soon reach them and are branching out into new lines of work.

Among the new interests which have proven most profitable in all parts of the South are hay, corn, and the raising of live stock, and of these hay-growing is of first importance. Twenty years ago the growing of hay for sale was almost unknown in the Gulf States, as it was generally believed that good hay, or hay in sufficient quantity to make it profitable, could not be grown there. At that

time the average yield through the South was less than one ton per acre, and it had no standing in the markets. In fact, little was saved excepting a partial supply for use on the farm. The southern planter was brought up to believe that the timothy and red clover of the North were the only plants from which really good hay could be made, but now he has learned better and knows that timothy is no better than Bermuda, and that he can not only grow red clover equal to any, but he can also grow lespedeza, cow peas, alfalfa and other crops which are fully the equal of the northern red clover. In fact, they are really better, being richer in protein, the most valuable element in any feed. This was fully shown some years ago in a very complete discussion of the matter, published in the "Experiment Station Record."

Iowa is the greatest hay-producing state in the Union, and Mississippi is fairly typical of the agricultural South. During the last ten years, according to statistics published by the United States Department of Agriculture, the average yield in Iowa has averaged 1.58 tons per acre against 1.62 tons in Mississippi; the average value of this hay on the farm in Iowa has been \$5.45 against \$10.09 in Mississippi, and the average value per acre in Iowa \$8.61 against \$16.35 in Mississippi. That is, the yield is about three per cent greater in Mississippi than in Iowa, while the value per ton and per acre is nearly ninety per cent greater. These figures speak for themselves. The varieties of hay which can be grown in the South are so many as to afford a wide range of choice. Within the last month the writer has seen bales of red clover, alfalfa, cow peas, vetches, soy beans, lespedeza, Spanish peanuts, melilotus, sorghum, oats, Bermuda, crabgrass, and Johnson grass hays on the market, and to those might have been added several more, rice, Dallis grass and others which are often used. Seven of those given in the list above are annuals which are planted in the fall after other crops have been harvested from the same ground, or are planted in the spring and are gathered in time to leave the land free for fall sowing, thus making the hay a "catch crop" which does not interfere with the grain and other crops.

We have always looked upon the extreme western states as being the only alfalfa region in the country, but during the last ten years it has been found that many sections in the South are equally well adapted to its growth, and those who were so fortunate as to

make this discovery a few years ago and who are in a favorable locality, are finding that crop more profitable than was cotton in its most palmy days. The principal alfalfa regions in the South are in the Rio Grande and Red River regions of Texas, and the "black prairie" region of northern Mississippi and northwestern Alabama, though it is grown more or less successfully on the alluvial lands along the Mississippi and other rivers. Texas growers make from six to eight tons per acre and find a ready sale for all they can produce at from ten to twelve dollars per ton. Mississippi and Alabama growers make smaller yields, from four to six tons, and find equally ready sale at from sixteen to eighteen dollars per ton. With such yields and such prices the alfalfa growers are literally "in clover."

Corn is another crop which is yielding high profits in the South. There is no obstacle in either soil or climate to prevent it from competing with the so-called "corn belt" of the North, and it is doing so successfully. The latent possibilities of the South as a corn producing region have been evident many years, though the general development of the industry is comparatively recent. More than twenty years ago South Carolina produced what was then the record crop, 236 bushels of shelled grain per acre, and the census report for 1880 gave Issaquena County, Mississippi, as making the second largest yield per acre of any county in the United States. Cotton was then a sure crop, bringing good prices and little attention was given to the figures. In the last few years, however, since planters have been forced to look to crops other than cotton, the growing of corn has received more attention and has been found extremely profitable. During the last month yields of 246 and 254 bushels per acre have been reported from South Carolina, and in all parts of the South yields of 100 bushels or more have been so common as to attract little attention. The 1909 crop in Louisiana showed an increase of more than 30 per cent over that of any previous year, and other southern states show a marked increase, though not so large because the weevil has not reached the part of the country farther east.

It is true that the corn weevil is often very destructive to southern corn in the crib, but as its injuries can be wholly prevented at a cost of less than one cent per bushel by the use of carbon bisulfide, that loss is more than compensated by the advantage of being able to place thoroughly matured and dry grain on the

market at a much earlier season than is possible from other sections. The average yields heretofore reported from the southern states have been smaller than those from some other sections, but that has been owing wholly to the fact that corn has been regarded as a crop of minor importance, usually being planted at any convenient season on lands too poor for cotton, and its cultivation neglected whenever there was other work to be done. Strange to say, the demonstration of the possibilities of corn in the South is due, not to the planters who were most vitally interested, but to the schoolboys who have formed "Boys' Corn Clubs" in nearly every county in the whole South. It is only about five years since this movement started, but it seems to have swept the whole southern country and has won the respect and support of all progressive planters. County boards have made appropriations for prizes, and the local papers have made special efforts to secure detailed statements of just how each prize crop was grown. Corn has always commanded a high price in the South, rarely bringing as little as seventy-five cents per bushel, and more often a dollar, and now that the boys have shown how intelligent work will produce such yields the business is increasing rapidly. The southern planter has discovered that the same amount of care and skill and labor will make as much corn in Carolina or Mississippi as in Illinois or Nebraska, and is changing his crops accordingly. It was formerly regarded as an unimportant "feed crop" but has now become a staple and profitable "money crop."

The raising of live stock of all kinds is proving very profitable on account of the small cost for food and shelter. Southern pastures contain an unusually large proportion of leguminous plants, the plants which give the richest feed for growing and fattening animals, the grazing season is long, from nine to twelve months, and the climate makes expensive barns unnecessary for protection. The principal cost in growing an animal is for its food, and the cheapest food for any animal is that which it gets by grazing. In the extreme South thousands of animals which have never seen a grain of corn or the inside of a barn are marketed annually, and even as far north as the Ohio River the feeding season is very short.

The mule is the work animal of the South, but, until recently, planters have depended on the northern markets for their supply. A few progressive men, however, are now raising not only what are

needed on their own plantations but a considerable number for sale. They find that with their abundant pastures and long grazing season a mule can be raised at about the same expense as a steer, many claiming that the total outlay for feed and care does not exceed two dollars per month, while the mule at three years old commands a better price than one of the same size and weight imported from Missouri or Ohio.

Cattle raising always gave a fair profit when the native "scrubs" were used, but the better pure-breds have proven so much more profitable that the native stock is rapidly disappearing. This is specially true on the immense Texas ranches, where there are to-day more registered animals than in any other state in the whole Union, and not only is the number greater but the proportion is still greater. From ten to fifteen years ago Texas was the best market for surplus breeding stock from the North, but is now the region from which the Northwest buys its pure bred breeding stock. The opportunities for profitable dairying are countless. Good feed for cows is easily and cheaply grown, and the market for milk and butter practically unlimited. Cows thrive and yield as well here as anywhere, while the usual price of milk is forty cents per gallon, and it finds a ready sale at that price. There is scarcely a town in the South where a dairyman cannot make a fortune.

The South is just beginning to grow its own pork, and finds that it can be grown here cheaper than anywhere else in the world. In this section good pork can be made without one cent of expense except for the planting and cultivating of the feed crops which the hogs harvest for themselves, and a few of our planters are now packing thousands of pounds of pork annually from hogs grown in that way. The most important point in making pork at a low cost is in having feed crops which mature in succession and so give the hogs constant grazing, and the possibility of doing this gives the South a great advantage. There are a dozen or more crops which are almost ideal for that purpose, among which are the following:

January and February—wheat, oats and vetch, artichokes, rape; March—oats and vetch, artichokes, rape; April—oats and vetch, alfalfa, red clover; May—oats and vetch, alfalfa, red clover; June—sorghum, cow peas, alfalfa, red clover; July—sorghum, cow peas, alfalfa, red clover; August—sorghum, cow peas, soy beans, alfalfa; September—sorghum, cow peas, soy beans, chufas, sweet

potatoes; October—sorghum, cow peas, soy beans, chufas, sweet potatoes, corn; November—cow peas, chufas, sweet potatoes, peanuts, corn, rape; December—cow peas, chufas, sweet potatoes, peanuts, corn, rape.

With such a large variety of plants, some of which will furnish grazing at all times, it is not difficult to make a selection for any locality which will give continuous pasturage through the entire year, and which will furnish a large proportion of the feed for the hog at an almost nominal cost. By arranging a proper rotation much of the ground can be made to produce two or three crops annually, and as all will be consumed in the field, succeeding crops can be grown with the use of little or no fertilizer. Of course the best succession of crops for different soils and localities varies greatly, and no one definite plan can be followed everywhere. In some localities crimson clover is used in place of the vetch, and on the light, sandy soils of the extreme southern section cassava takes the place of artichokes. These figures and statements are not mere paper possibilities, but are based on what has actually been done in localities which possessed no special advantages. Hon. W. L. Foster, of Shreveport, La., writes that he packs annually 30,000 to 40,000 pounds of pork for use on his own plantation, and that it costs him little more than two cents per pound in the barrel. Prof. J. W. Fox, of the Greenville, Miss., experiment station, has recently published a report describing how he grew something over 20,000 pounds of pork last year, which cost him \$579.50 and which he sold for \$1,382.51, giving him a net profit of \$803.01. In the cost of this pork he includes a charge of \$354.50 for corn which was gathered by the hogs themselves, but was charged to them at an average rate of 67½ cents per bushel. Prof. Duggar, of the Alabama station, Dr. Redding, of Georgia, and Col. Newman, of South Carolina, give almost the same figures.

Sheep flourish in all the "piney woods" region, where they are remarkably free from all diseases. Most of these sheep range in the open woods during the entire year and receive no feed or attention of any kind except an annual shearing and marking. Of course the yield of wool is light, but it brings a fancy price on the Boston market, and as the animals cost nothing for their keep they are quite profitable. Recently a number of owners have introduced rams of the mutton breeds and are finding the production of spring lambs

even more profitable than the growing of wool. With the mild climate it is possible to secure lambs so early in the season that they are ready for the northern markets several weeks before they can be shipped from the western farms. Within the next decade a good part of the "hot-house" lambs for the Washington and New York markets will be range lambs from the gulf coast.

The southern planter has come to realize the importance of good seeds, and there is an excellent chance for a few men to make good money growing them in every community. Seed breeding is an almost unknown business in the South, and thousands of dollars are sent out of the country annually for the purchase of seeds which are not as well suited to our soils and climate as are those which are grown here. The best corn and the best cotton for any locality is a variety which has been bred and developed in that locality. The few men who are now engaged in that business are finding ready sale for all their products, and there is abundant room for at least one such man in every county. This is one of the very best business opportunities for men who have had college training and who know the principles of correct breeding and selecting. The writer knows four such men who have been growing seed corn a few years, and not one of them has ever had sufficient seed to supply the demand at two dollars per bushel. There are equally good opportunities in the breeding of cotton, oats, rice and other crops. The average planter is not a seed breeder, but he knows the worth of good seed and is ready to pay a good price for it.

Many other profitable new crops might be mentioned. During the last year the growing of rice was attempted in Mississippi and Arkansas, yields of over ninety bushels per acre being secured. Oranges and figs have been found extremely profitable from southern Mississippi westward to southern Texas. As fast as the railroads reach new sections new market gardening areas are developed and shipments become more profitable. The agricultural development of the South has only just begun, but the "Wall Street Journal" says:

"We have become so accustomed to associating agricultural prosperity with other sections of the country that it is something of a surprise to learn that in the past year the twelve southern states produced over \$1,429,000,000 worth of agricultural products, as against \$705,000,000 in 1899, an increase of more than 100 per cent, while the average increase of the other sections was a little less than 65 per cent."

The coming of the boll weevil has broken up the old system of agriculture, but a better system is being developed. New crops are being grown, new methods of cultivation are being adopted, and the next ten years will see the South in a better financial condition than at any time since the war.

SURE BASES OF A GREATER SOUTH

BY G. GROSVENOR DAWE,

Managing Director of the Southern Commercial Congress, Washington, D. C.

The New South, as contrasted with the South of ante-bellum times, is based upon the very oldest elements in the South, and is, therefore, not new at all, except as signifying a newly understood South. The words "New South" merely describe the application of man's transforming energy to opportunities that have lain dormant since time began. Looked at in this way, the New South is seen to rest upon the unrecognized labors of the surveyor, the hydrographer, the geologist; for these have brought into light the sure bases of greatness. To prove the development, which must come to the South, when its natural possibilities are more correctly understood within the South and outside of it, is the purpose of this prefatory statement; leaving the articles elsewhere in this volume to give the details of specific accomplishments.

There are certain natural gifts belonging to the South which when understood in their total significance, indicate a very much greater South than the "New South" that has already attracted so much attention and aroused so much enthusiasm. These great gifts are: Coastline, navigable streams, water powers, minerals, forests, temperature and rainfall, and agricultural lands.

Coast Line

The meaning of a coast line, when satisfactorily indented, is ease of access to the commerce of the world. Viewed from this point it will be seen that the Southern States possess an enormous advantage over the other two-thirds of the United States; for the coast line of the Southern States is 3,007 miles while the coast line of the north Atlantic states is 888 miles, and of the Pacific coast 1,557 miles. When the indentations are considered the South is naturally far ahead of the north Atlantic and immeasurably ahead of the Pacific coast.

The natural advantages of coast line are already asserting their influence; for we are able to say that a southern port still holds the second position for exports among all ports of the United States—New Orleans, in 1900, and now a southern port that nine years ago was wrecked and rent by storm—the port of Galveston.

We are able to show that the exports along the gulf now exceed the exports of Philadelphia and Boston by ninety-three per cent, and they equal more than sixty-six and two-thirds per cent of the total which belongs to the overshadowing port of New York. The tables of exports for 1900 and 1908 show that twenty-seven per cent growth in exports has taken place in New York, Philadelphia and Boston regarded together. During this same time the exports from southern ports handling more than \$1,000,000 worth increased thirty-four per cent.

In the matter of imports—goods coming to America for distribution—we find that while the three great ports, Boston, Philadelphia, New York have increased twenty-seven per cent, the southern ports have increased 102 per cent. This may be looked at another way. In 1898 imports along the gulf were \$13,062,729. In 1908 they had grown to \$59,340,735, an increase of 354 per cent. In 1898 exports along the gulf were \$201,847,700. In 1908 they had grown to \$396,552,136, an increase of ninety-six per cent.

When we consider also that all this swing of commerce is taking place prior to the completion of the Panama Canal, and that the Panama Canal will help to pull southward every inter-oceanic movement, we must realize that southern ports will be on the very front door step of the world's future commerce. South America and the Pacific—by reason of their nearness—will be peculiarly available for southern growth.

Navigable Streams

A coast line adequately fed by navigable streams means, no matter how trivially used at present, an ultimate development of vast importance; for streams can be depended upon to carry bulky freights while the railroads, at present insufficient in the South, turn their powers towards the higher grades of freight needed within the growing South or shipped by it to other less favored states and countries.

The National Conservation Commission has reported that there

are in the United States navigable streams amounting to 26,410 miles. Of this mileage there is in the South 18,215.

Tributary to the Atlantic	4,567 miles
Tributary to the Gulf (excluding the Mississippi River)	5,212 miles
Tributary to the Mississippi River in southern territory	7,073 miles
The Mississippi River in southern territory	1,363 miles
	<hr/>
	18,215 miles

This enormous total does not include a single mile of the Ohio, though it benefits the southern states through 900 miles. Neither does this total include any portion of the Missouri River. If the Mississippi be regarded as a feeder for gulf commerce the mileage should be:

Tributary to Atlantic	4,567 miles
Tributary to Gulf	19,124 miles

At present not a fraction of the advantage offered to the southern inland cities by navigable streams is utilized, but the day is coming when that utilization will be here, and when that day comes the streams of the South leading to the great and growing ports of the South will give the inland cities water-borne opportunities sufficient to make them leap more rapidly forward into commercial importance than in the marvelous twenty years just ending.

Water Powers

The possibilities of the South in the terms of water power are as disproportionately large, when compared with the other two-thirds of the Union, excepting the extreme northwest, as are those of coastline and navigable streams. The most potent influence is the Southern Appalachian Range. Its vast upheaval makes it the greatest power-producing mountain range in the East, for it lies altogether in a region of plentiful and fairly-distributed rain-fall. The actual figures are indeterminate. However, Secretary Wilson, in a recent report, places it at 5,000,000 horse-power for the six high-water

months. Frank S. Washburn, the eminent hydro-electric engineer, thinks that this vast figure could be doubled by well-arranged storage basins. To give an inkling of what the development of these powers will mean, it is wise to refer to New England. That whole region has chained a little over one million horse-power. The Southern Appalachians contain nearly ten times as much potentially available; yet the manufactured products of New England at present equal the manufactured products of the whole South—66,000 square miles, with few raw materials, equaling the pigmy efforts of a giant spreading over one million square miles and rich in raw materials.

The day is coming when, through conservation impulses, this water will be used to drive the wheels of industry and of transportation throughout the South, thus indefinitely extending the life of power buried now in the coal fields of the South. If we study the statistics of the matter, we find that in no similar area of this country is there five million horse-power so conveniently arranged, so distinctly marked, or so near to extended plains and rolling country, where factories can be easily erected and the produce of the field can be carried to the factories. The South, with a potential ten million horse-power in the Appalachian Range, has the foothills all round it full of materials above ground or underground, simply waiting for the harnessing of that great power to make those foothills on every side a tremendous electrified manufacturing area. When, furthermore, it is considered that not one horse-power has been included above for the rivers falling into the western Gulf of Mexico or those tributary to the Mississippi on the west, the commercial importance of the South in aiding to extend the life of the national coal beds will be comprehended.

Minerals and Forests

The minerals of the South are worthy of serious consideration, as a guide to what awaits her in development. In oil barrels she has increased since 1880 from 179,000 to 74,128,019. In sulphur she has rapidly appropriated over 98 per cent of the country's product. While in coal resources all other states of the Union are exceeded by Wyoming, North Dakota, Montana, and Colorado, the coal fields of the South are peculiarly accessible to navigable streams—a privilege denied the western states mentioned above.

The headwaters of the Ohio tap rich coal regions in West Virginia and in effect make Pennsylvania a contributor of coal to the southern states by way of the Mississippi; the Alabama coal field, estimated to contain sixty-eight billion tons in its 8,000 square miles is tapped by the river system flowing by Mobile. Also since the southward tendency of railroad construction set in, every new line has served to place southern coal fields within commercial reach of the coast.

The coal possessions of southern states, according to the report of the National Conservation Commission, are stated below in millions of short tons:

Alabama	68,656
Arkansas	1,851
Georgia	981
Kentucky	103,844
Maryland	7,823
Missouri	39,854
North Carolina	200
Oklahoma	79,219
Tennessee	25,539
Texas	30,978
Virginia	22,414
West Virginia	230,389
Total	611,748 millions.

Add to coal the great iron riches of the Southern Appalachians where ore, coal and limestone are frequently in juxtaposition, then add to these the practical monopoly in phosphate rock, the complete monopoly in bauxite and asbestos, the leadership in Fuller's earth, in manganese, in sulphur and in some of the rarer minerals; then add to this the clays, the building and ornamental stones and last, the immense cement resources, near to navigable streams—then there comes into sight a certain unapproachable mineral advantage given by Nature to the South.

Against minerals which are irreplaceable, the South is still able to show ownership of forty-one per cent of the remaining forest area of the United States; a gift that is replaceable under proper impulses and extensible if used aright. The forest area has some broad details; the hard-wood area is largely confined to

the Appalachians; a mixed area takes a huge sweep around the Appalachians; and the long-leaf yellow pine area lies in another broad belt around the Gulf of Mexico.

Temperature and Precipitation

It may be safely said of warmth and precipitation, that warmth without rain produces a desert; that rain without warmth produces a frozen and forbidding area. The South combines more markedly than any other third of the Union a fine growing temperature and a copious yearly rainfall. The effect is clearly seen by those who wish to see.

If we go to the southern portion of Florida we will find tropical fruits. If we go in winter time to Florida and Texas we find northern vegetables growing and ready for winter marketing. If we follow up the Florida coast we find celery and lettuce growing for the consumption of New York City while New York City is shivering in zero temperature. Follow the whole vast agricultural area of the South, from the Everglades of Florida and from Brownsville, Texas, up to the Mason and Dixon line, and we have to declare that for agricultural range and possibility there is no area of the United States that can vie with the southern states. The isothermal lines, which have a very irregular range in the southern states, produce the anomaly, in the State of Alabama for instance, of wheat growing within a hundred miles of cotton; yet wheat is the great hope of the northwestern territory of Canada. We can put it down as an incontrovertible fact that the materials for both food and raiment coming out of the ground are all produceable in the extraordinary range of climate which belongs to the southern states.

Agricultural Lands

Though the South holds the American monopoly on cotton, her possibilities in that and all other agricultural lines have not yet been scratched. This can be plainly shown. There are 612,096,900 acres of land in the southern states. Of these less than twenty-five per cent are improved, or 145,185,999 acres. The more or less shiftless agriculture of the past is being rapidly supplanted in many regions by intelligent and intensive methods. This will shortly show itself by the South ceasing to depend on Western produce;

then living on what she raises herself, and then shipping out instead of shipping in. Of all the opportunities in the South the agricultural is among the greatest of the great.

This brief summary is not intended as exhaustive. It is a plain, brief statement of facts, accessible to all who wish to comprehend the coming development of the South. It makes no reference to any but the gifts of nature. The conclusion is unavoidable—nature has intended the South for a vast commercial development. Man within and outside the South has been slow to see this purpose of nature; it is now gradually unfolding and stimulating the man of the South to unwavering faith, and others toward investigation, and a new belief in a region of which they have been largely ignorant.

FOREST RESOURCES AND CONSERVATION¹

BY JOHN H. FINNEY,

Secretary, The Appalachian National Forest Association, Washington, D. C.

The new spirit of the old South breathes "opportunity." It is still the old South with all its charm and glamour and hospitality, extending wide its arms and speaking in a new voice to the world. It is opportunity that calls for a vast and profitable exploitation of her material resources in all the things which are making this a new field for human endeavor and national prosperity, and opportunity that calls for wise statesmanship and unselfishness in all which makes for their proper exploitation and their wise conservation.

Of the South's material resources, her heritage of forests must be accounted as of large, if not indeed paramount, importance, for in the sixteen states denominated and accounted here as southern, lie all of one of the five great original forest types, the southern, a considerable portion of the northern, and the largest part of the central, or nearly one-half of the original forest area of the nation.

Original Forests

Geologists tell us that far back of the four thousand years of recorded forest knowledge and experience had by the race, there was a time when all of the American continent was one vast plain, densely covered by forests to as far north as Greenland; that the forests are older than the mountain ranges which rear their heads as though from the very beginning of things; that in spite of climatic and other changes which the centuries have wrought, some of the species which flourished in these ancient forests are in existence to-day, notably the magnolia and the tulip tree, both beautiful gems of the southern Appalachians.

As of more intimate concern, however, we find that at the time of the discovery of the American continent by Columbus, the original forests of the nation exceeded in quantity and variety of

¹The author acknowledges with thanks valuable data from the Forest Service in the preparation of this paper.

their species the forests of any other region of similar size on the globe; they consisted of five great forest types, namely, the northern, southern, central, Rocky Mountain and Pacific coast, and these names are indicative of their relative location.

The so-called southern forest began in New Jersey; from this point widening out southward and westward through Maryland and Virginia, covering most of North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi and Louisiana, a large portion of eastern Texas, southern and western Arkansas, with a considerable portion in southern Missouri. This area was a coniferous forest, the yellow pine predominating, but mixed with pine were cypress, oak, gum, magnolia, poplar, and a variety of other hard woods.

The so-called northern type extended from Maine on the north, through New England, across New York and most of Pennsylvania; thence along the lakes through Ohio; thence to the northern portion of Michigan and Minnesota to the western border of the latter state, with an extension southward along the high ridges of the Appalachian range to as far south as northern Georgia. This forest, like the southern, was a coniferous one, and was the home of the white pine, associated therewith being red pine, spruce, hemlock, cedar, cherry and hard-wood species of minor importance.

The central type lay stretched between these two, from the Atlantic coast to the plains of the Middle West, covering the east and west slopes of the Appalachian range and foot-hills, and including all of Tennessee and Kentucky; with small portions in northern Alabama, Georgia and Mississippi, with large areas in central Texas, in central Oklahoma, and covering nearly all of Missouri. With its lines not very sharply defined, the central type was the only forest area in the United States in which the hard woods predominated, and they grew in extreme abundance and wide variety—walnut, oak, elm, hickory, chestnut, sycamore, and many other valuable varieties reaching here their maximum development. These three great forest types originally covered in the South an area of approximately 400 million acres, or about one-fifth of the total land area of the United States, and contained in the same boundaries not far from fifty per cent of the nation's total timber, out of the 5,200 billion feet in all the forests.

The Present Forest

The present bounds of the above original forest type in the South remain the same in general, as does the respective character of timber growth, except that the original areas and their contents have been greatly reduced by cutting, clearing and fire, so that we find, starting with an original forest area in the nation of 850 million acres, containing a stand of 5,200 billion board feet, we have remaining as the total timber supply of the United States, not over 550 million acres, with a total stand of about 2,500 billion board feet.

The stand of timber in every region has been reduced in even greater proportion than has the actual forest acreage; whereas the northern forest originally contained 150 million acres and 1,000 billion feet, it now contains about ninety million acres and 300 billion feet, or sixty per cent of its original area and thirty per cent of the stand; the southern forest originally contained 220 million acres and 1,000 billion feet, and now contains 150 million acres and 500 billion feet, or sixty-eight per cent of its former area and fifty per cent of its former stand; the central, originally containing 280 million acres and 1,400 billion feet, has been reduced to 130 million acres and 300 billion feet, or forty-six per cent of the original area and twenty-one per cent of the stand.

It will be seen that the central forest has suffered the most, and this is due to its location in the rich agricultural states, where the hard woods predominated, and were consequently cleared to make way for farming operations—more than they were cut for lumber,—resulting in the practical extinction of the hard woods in the central agricultural states. I qualify the words “practical extinction” by citing the known fact that the present stand of hard woods in the Lakes region is so small as to be relatively unimportant when considered for lumber operations.

Southern Forests Species

Chief in quantity of stand, value of cut, and widest use, is yellow pine, of which the principal species, cut in Georgia, Florida, Alabama, Mississippi, Louisiana and Texas, is the long-leaf pine, this species amounting to fifty per cent of the total cut. The cut of this in 1907 was about thirteen billion feet, and while the total stand may be 350 billion feet, there are heavy drains on the stand

from other sources than lumber operations. This species is heavily damaged by forest fires, by the naval stores industry, and by insects and wind following this industry; and it is said by many operators that their supply will be exhausted within the next fifteen years, at the present rate of cutting. The center of yellow pine production, held by Georgia, in 1900, has rapidly moved westward in recent years, and is probably now in Texas, this state being second in 1907, with more than sixteen per cent of the total cut.

Oaks are the most widely distributed forest trees in the South and assume large importance as a southern product. There was cut in 1907 something over two and one-half billion feet of this species in the South, with West Virginia slightly in the lead in production, and Kentucky almost equaling her, nearly one-fourth of the total output coming from these two states; while in 1900, Indiana ranked first, with nearly three times as great production as in 1907. The cutting out of the northern supplies of oak from the central forests has compelled the shifting of the industry southward.

Yellow poplar is another valuable species, in the production of which Kentucky, West Virginia and Tennessee have long been the leading states. In both 1906 and 1907 these states furnished three-fifths of the total cut. In cypress there is said to exist a stumpage of about twenty billion feet, with an annual cut of about three-fourths of a billion; Louisiana is pre-eminently the cypress producing state, and its output in 1907 was more than two-thirds of the total cut. Red gum is a species found almost exclusively in the central and southern states, Arkansas leading in its production in 1907, with an output of more than one-third of the total cut.

Chestnut, owing to the rapidity and ease with which it reproduces from sprouts after cutting, makes a valuable species of the Appalachian range, and is one of the characteristic trees there. While Pennsylvania ranked first in chestnut production in 1907, West Virginia was a close second, followed by Tennessee, Connecticut and North Carolina in the order named.

In hickory production Arkansas ranked first in 1907, with fifteen per cent of the total cut, with Kentucky, Indiana and Tennessee closely following in the order named. Owing to the fact that hickory is not found in pure stands, but is thinly scattered throughout hard-wood forests over a wide area, it is difficult to

make an accurate estimate of the total stumpage of this variety. The same comment can be made of the other hard woods, such as the maple, chestnut, beech, birch, basswood, elm, ash, walnut, etc., but the significant fact remains that it is to the South the nation must look for its future supply of hard wood, as will be shown later.

As a forest resource of great importance must be classed the naval stores industry. Data recently gathered by the forest service shows a production in 1908 of over thirty-six million gallons of turpentine and four million barrels of rosin. Georgia and Florida supply two-thirds of this total, and the manufacture and exporting of this material is of enormous value to these states, and to the great ports of Jacksonville and Pensacola. It should be noted in passing, that while this industry does not necessarily destroy the forests, and could be made, under proper methods, a perpetual source of income, the methods commonly used in the majority of turpentine operations, and subsequent wind storms and fire damage, have resulted in the needless destruction of vast quantities of saw timber, are rapidly placing this industry in a most critical condition, and signing its death warrant!

Southern Forest Ownership

There are four national forest areas in the South, two containing 674,891 acres in Florida, in the Ocala and Choctawhatchie Reserves, set aside last year, and two containing 3,189,781 acres in Arkansas, established in the spring of this year. These areas, while impressive as to acreage, are not of great value for a timber supply, for the good lumber has been "alienated" successfully in both states. The important remainder is individually owned throughout the whole South. These private forests are of practically two types:

(1) Farmers' wood lots, and relatively small holdings; (2) Large holdings, either individual or corporate, the latter used as the basis for timber cutting and manufacture, or held for subsequent cutting or sale.

The farmers' wood lots, or small holdings, are mainly scattered and detached remnants of the original forest area and have, as a rule, been severely culled and greatly damaged. They are chiefly valuable for ornamental or protective purposes, and for firewood supply, fence posts, cross ties, etc. While these holdings aggre-

gate, perhaps, over 100 million acres in the South, and may contain a stand of 150 billion feet of saw timber, their small area and their damaged condition make lumbering on any extensive scale impossible. The second-class, which comprises the large individual or corporate holdings, contains a stand, roughly estimated, of about 350 billion feet, and covers an area not far from 125 million acres.

The South has, in recent years, presented an attractive field for timber investments, particularly to capital which, having cut the northern forests and the important part of the central forests, was seeking and had to seek new fields for endeavor and profit. These private holdings are frequently of enormous size and are being exploited on a large scale. A conservative estimate places approximately seventy-five per cent of the large holdings in the hands of "alien" capital, and it need not be said, perhaps, that such holdings generally include the best timber in the regions in which they occur and are the principal sources of the present timber supply from that section.

The South's Pre-eminence

It must be apparent that the South can justly claim distinction in forest ownership and products, for we find from this review:

First. That it contains practically fifty per cent of the nation's remaining timber.

Second. That it is the home of the long-leaf pine, and it grows only there.

Third. That it is the home of the cypress, and it grows only there.

Fourth. That it is the home of the naval stores industry, and it exists only there.

Fifth. That in hard woods of all kinds it ranks first, and, of the utmost significance as regards these valuable species, the South contains in the Appalachian regions: (a) The natural home of the hard wood; (b) practically the only remaining stand of hard wood on the continent; and (c) practically the only remaining source of future hard wood supply.

That phase of this article dealing with "Conservation in the South" cannot be handled with the optimism displayed in dealing with the forest resources, for, while the forests are real and tangible, candor compels the statement that conservation ideas and

methods and appreciation are almost totally lacking. The title is more in keeping with the facts if called the "Need of Conservation in the South," and so handled, some of the essentials will be stated as a foundation upon which the South can build, and finally must build, lasting constructive work along conservation lines.

What "Conservation" Means

Conservation has been aptly put as the "application of common sense to common problems for the common good"—it is more than that, for it is a moral question involving common honesty to one's self and to posterity; an honest stewardship of the material things that are ours solely as trustees; a wise and economical use of them; a stoppage of the waste; an increase of human efficiency; the equality of opportunity. It is a new thought born of the foresight of such men as Gifford Pinchot, Theodore Roosevelt and others, and appealing none too soon to the inherent good sense of the American people, who are in part realizing how far we have wandered from this conception of our responsibilities and duties.

Some Present Southern Conditions

We find in existence in the South, as everywhere in the nation, much of the national characteristic of strenuous endeavor, and of the national desire to use most quickly and profitably the natural wealth, whether in mines, or soils, or streams or forests, and convert it into coin of the realm. It is no arraignment of the South in particular that this is so, or that the exploitation of this natural wealth has been accompanied there with the tremendous and lamentable waste which has been equally in evidence in every part of the republic. The fact that we have piled up national riches beyond counting, and are still achieving such material success as is making us richer day by day, does not clear the national conscience of the proved charge that the waste, the inefficiency and the disregard of the future which have accompanied this success, would have bankrupted any other nation on earth!

While the conservation idea covers all the natural wealth and the "need for conservation in the South" applies to the South's resources in all these things with grave force, I must needs deal primarily and principally with what I consider in the light of the forests' critical condition, its most important phase, namely, its

application to the forest question. The urgency of the forest question is of the first importance. The forest is the keystone of the whole conservation movement.

Soil improvement and intensive farming may come gradually without the farm disappearing; unimproved waterways remain for later improvement; mineral wealth in coal and iron and oil is not so seriously depleted but that skill in mining and more efficient methods and use will eventually stop, in large part, the present waste and stretch out over many long years our present supplies—but the forest faces its complete destruction within a decade or two, and the nation faces a timber famine that involves national disaster.

It is a sober statement of fact that we are using the forests at a rate more than three and one-half times the annual growth—that we have a tremendous drain on them from forest fires in addition to this use. This means but one thing—whether that time be fifteen or twenty or thirty years—the time will come when the destruction of our southern forests will be complete, and our present fair south-land made into a desert, *if we do not remedy promptly the present conditions and soberly and resolutely assume our individual duty.*

That this is not a pessimistic stand or unwarranted statement is borne out by the facts, and here are the facts: Of the South's 125 million acres of privately owned lands, a bare one per cent of the area thereof is in any way being conserved and wisely handled, and this vast domain is uncontrolled by any state or national laws respecting its use or abuse. In no southern state is there an acre of land in "state forests," and it is true of most of them that there are neither funds available for the purchase of forest lands, nor inclination to find them for this purpose. In no southern state are there adequate laws to prevent forest fires, and most have none at all. In none of them, so far as I know, is there any set of officials charged with the enforcement of such as are written on the statute books, nor any present indications that adequate laws will soon be either written or enforced.

In all the southern states the method of taxation of forest lands is such that a premium is placed on forest destruction—much cutting necessarily results from so vicious and wrong a theory—for between high taxes imposed by the state and the dangers from forest fires due to inadequate laws and the lack of fire prevention methods

and patrol, the forest owner is indeed between the devil and the deep sea. There is likewise no state forest bureau or organization having under its charge forest statistics or reliable data thereon. No one knows except approximately the startling total fire loss, nor even the forest stand, so that figures used here as to the latter must be considered only relatively correct. If to individual indifference there be added the indifference of southern legislators, national and state, and the states' total disregard of their duty and opportunity, is it small wonder that there is no "Conservation" in the South.

What Shall Be Done?

The plain statement of facts calls for some suggestions as to the remedy necessary and possible. The forest question involves equally in responsibility the nation, the state and the individual, in simultaneous co-operation. The nation is doing a part of its duty in the establishment of the area it has set aside for forest reserves in the West, and must finally give us, because the people will finally compel it to do so, national forest reserves in the East at the headwaters of important streams—this will finally mean the Appalachian forest and the White Mountain forest and other important areas similarly situated and needed.

The states must acquire forest areas for state forests, as New York and Pennsylvania have done and are still doing; the state must demonstrate to its citizenship, as *it* only can on any large scale, that tree growing is profitable; that there is a state duty in passing and enforcing fire laws; that there is a state duty in equalizing taxation on lands that are to be and should be conserved; that there exists the *state's right* to insist that lumber operations shall be so conducted on sane lines that the state shall not be made a desert waste.

The individual must be made to realize the conditions and their gravity; to help the nation and the state by hearty co-operation in conservation plans; to awaken to the moral issues involved; to assume his responsibilities willingly; to see himself as a public servant, with clearly defined duties to his state and to his fellow-men; to realize that quite apart from its functions as a producer of lumber, the forest has an even more important bearing on agriculture, climate, health and water conservation, and that its total destruction cannot be permitted.

I am enough of an optimist to say and to believe that these necessary things can be done; that as the knowledge of conservation grows, we shall stir into action influences that will not rest, until these necessary things *shall* be done. When done and only then, shall the nation escape the fate that nature inevitably exacts from peoples who grossly misuse her bounty and disregard her wise plans.

RECLAMATION AND DRAINAGE

BY SLEDGE TATUM,

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One has but to consider the rapidly increasing growth in population in the United States and compare this extraordinary growth with the rapidly diminishing areas of arable land in our national domain that will make homes and support families, and to think of the centralization of the annual influx of emigrants in the busy centers, to realize that very soon every artificial means must be adopted in adding to the tillable land which now supports the people and forms the backbone of our national prosperity.

Practically all the lands in the United States that are at present ready for agriculture have passed into private ownership. The rapid increase of the population has made it necessary for the federal government to resort to irrigation of the arid lands to provide homes for the people. The wisdom of this measure cannot be overestimated. This act of Congress, passed in 1902, provides for the appropriation of receipts arising from the sale of public lands in certain states and territories for the construction of irrigation works for the reclamation of arid and semi-arid lands. Up to the present time the government has invested in irrigation projects in this manner, in thirteen western states and two territories, fifty-two million dollars.

These lands are sold to the settler at actual cost of reclamation, to be paid for in ten annual instalments. As the moneys arising from the sale of these lands are to be returned to the reclamation fund and reinvested in irrigation projects, the benefits arising from this act are far reaching. This subject is an absorbing and interesting one, and pregnant with stupendous possibilities. The drainage of swamp and overflowed lands offers reclamation possibilities of equal magnitude, and from an industrial standpoint is even more attractive.

Lying along the south Atlantic and gulf coasts, from Virginia to Texas, are millions of acres of swamp lands which serve no useful purpose, but are a serious menace to the physical health of

a large body of our population and interfere seriously with highway construction, which is necessary to social and business intercourse. A large part of this waste area is drainable by gravity at small initial cost per acre, and when we consider the length of its growing season, its proximity to the large centers of population, its water transportation possibilities, and its exceptional fertility, it readily can be seen that these swamp lands are destined to play an important part in the future development of the country.

An estimate of the swamp lands which can be won to agriculture by engineering expedients in the Southern States will be found below. These figures are only approximate, but it is believed that they lean to the side of conservatism and that data obtained by topographic surveys will considerably increase this estimate.

SWAMP LANDS—SQUARE MILES.

Virginia	900	Arkansas	6,300
North Carolina	3,800	Tennessee	1,000
South Carolina	3,400	Louisiana	12,000
Georgia	1,800	Texas	3,800
Florida	14,000		
Alabama	1,200	Total	56,200
Mississippi	8,000		

The object in preparing this table has been rather to indicate the importance of these lands to the agricultural interests of the South than to afford precise statistics. Such statistics can be obtained only when the topographic maps of each state are completed and the area of each individual unit has been computed.

To understand the causes which produce embarrassed drainage conditions involves a knowledge of the physical history of a country combined with the relations between the rainfall, the gradients by which that rainfall descends to the sea, the seasonal distribution of the rainfall, and the temperature of the district. Among the varied conditions which determine the formation of swamps, the shapes of the land, or the topography, are generally of most importance, second, the rainfall, and lastly, the temperature, which serves to affect in a measure, the dryness of the air and also the nature of the vegetation. It can therefore be seen that the formation of these swamps depends on a great variety of circumstances, and it is plain that in this brief paper we cannot go deeply into any

of these subjects, nor is it my purpose to present a treatise. However, I wish to call attention to the enormous areas of swamp and overflowed land lying along the Atlantic and gulf coasts, and extending along the rivers into the interior, from the Potomac River to the Rio Grande, and the value of these lands for agricultural uses when reclaimed by artificial drainage.

Swamps of a similar character, to some extent, are found in the region north of the Potomac, but they do not take on a conspicuous aspect until we pass southward of that stream—this for the very good reason that the surface of the country is higher as we go north and has developed a stronger topography. The streams in most cases are sufficiently incised to permit almost everywhere the ready drainage of the water, despite the obstructing effect of vegetation. Moreover, north of the Potomac the mean annual temperature is lower and the many plants which obstruct drainage in the southern states have but a scanty growth.

The drainage of swamp lands for agricultural purposes is as old as the art of agriculture. England and Ireland have engaged in wet-land reclamation for more than one thousand years. It is estimated that five per cent of the fertile lands of Great Britain were covered by swamps at the beginning of the eighth century. In Italy large areas have been freed from mosquitoes and malaria, and made productive by the restraint of the flood waters of the Po, while other large areas have been made fertile by their distribution. In Holland even greater results have been accomplished by artificial drainage. By the construction of huge dikes and the installation of pumping plants lands lying below the ocean level and formerly covered by the Haerlemmer Meer and the Zuider Zee have been converted into productive fields. In this latter enterprise Holland is at present spending millions of dollars. These drainage projects have added millions of acres to the cultivable lands of Europe, and the lands so reclaimed are now among the greatest producers of food products in the world.

Drainage of large areas, in the aggregate, has been accomplished in the southern states through private enterprise, and the results accomplished have more than justified the outlay. It is not believed, however, that individual effort can ever solve the reclamation problem, and several of the southern states, notably North Carolina, Florida, Mississippi, Louisiana, and Texas, are energetically taking hold of the question.

It is coming to be recognized as never before that the engineering problems in this connection are very broad and that both preliminary surveys and construction plans must be undertaken on a comprehensive basis. This is a long step towards the solution of the problem. It is hoped that we have nearly completed the days of wasteful expenditure for construction without exact engineering data for a basis. To proceed, in localities of limited area, with plans in which only local interests are considered and the general topographic features of the drainage basin of which they form a part overlooked, must result in injurious consequences to other interests and probably result in local complications. The boundaries of drainage units, to be successful, should be determined by the physical features of a district, and not by arbitrary limitations. Again, the problems of drainage, highway construction, improvement of natural waterways, and water-power development, are frequently so related that the solution of each must be worked out with due consideration of the others.

There are many opportunities for inland navigation along the south Atlantic and gulf coasts, and the development of these will have an important part in the reclamation of the swamps. These swamp lands when reclaimed will offer a combination of advantages such as are rarely found in any part of the world—an excellent soil; ready rail and water communication; favorable climate; with a cost for improvement less than that required to win to agriculture the arid lands in the western states.

THE POWER RESOURCES OF THE SOUTH¹

BY FRANK S. WASHBURN,

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Nature, before man's advent, marked the southern states region as the home of water powers. The distinguishing natural characteristics of this region are the very ones which produce numerous and great water powers and foster industrial conditions, making feasible their useful application. Consider the copious rainfall with good seasonal distribution; massive lofty mountains, remote from the sea coast, covered densely by unbroken forests for the rain to fall upon; favoring topographical conditions under which impounding reservoirs are practicable along the tributaries; and geological action, so universal in effect that every great river, as it flows with its gathered waters through the lowlands, comes to a place where it tumbles down over a rapidly descending bed. Note the exceptionally favorable climate; peculiar meteorological conditions, and a soil which seems to assure to the region a world monopoly of a universally necessary natural product requiring cheap and plentiful power for its fabrication; majestic rivers navigable almost to the mountain base; timber, iron and coal in great abundance and disposed for cheap production; and everywhere the sea close at hand to the industrial section.

Barring the shore line of the Pacific in Washington and Oregon, and a still narrower strip along the summit line of the Sierras in California, and that of the Cascades in Washington and Oregon, the whole of the United States west of a north and south line drawn through central Texas may be considered as arid, the greater portion of it having a mean annual rainfall approximating fifteen inches. Extending in a north and south belt 200 miles wide through central Texas, Oklahoma, Kansas, Nebraska and the Dakotas is the semi-arid region, the greater portion favored with rainfall averaging less than twenty-five inches per annum. East from this, extending to the Atlantic, is the great humid region, within

¹A paper read before the Southern Commercial Congress at Washington, D. C., December 7, 1908.

which, however, there are greater differences of regional rainfall than exist between the different grand divisions themselves. The northern half, being really semi-humid, has thirty to forty inches rainfall, while the southeastern portion, bounded by a line extending from Galveston on the Gulf coast, north to central Arkansas, then east to northeastern Georgia, thence northeast to southeastern Kentucky, thence east to the Atlantic coast, constitutes the true humid region that has fifty inches to sixty inches precipitation, while the mountainous portion thereof in east Tennessee, western North Carolina and South Carolina, northwestern Georgia, and northeastern Alabama, together with a narrow strip along the Gulf of Mexico, shows the extraordinary average of sixty inches to seventy inches of rainfall per annum.

Even this striking superiority in rainfall does not directly convey an adequate idea of the superiority of southern water-power possibilities, for it is the volume of water which actually finds its way into the streams that determines the measure of power, and this may be less than two per cent of the precipitation in a region of twenty inches average rainfall, and may exceed fifty per cent of the precipitation in a region of sixty-five inches average rainfall.

A realization of these exceptional meteorological phenomena coupled with the unparalleled surface conditions comprised in the towering mountain masses of the Southern Appalachians covered with close set hardwood forests, nurtured in their birthplace, impels the mind to the belief that here is the spot nature selected to foster man's efforts to transform to his uses the exhaustless energy of falling water.

Relation of Water Power to the Future of the Race

How are we to interpret the modern consuming industrial activity of civilized peoples? Is it a phase approaching the zenith to pass and be interpreted by future generations as important only in that it was one more historical epoch, contributing much of value to the world, but from the excesses of which man recoiled, setting his ambitions to something more worthy? Or will the evolution follow an ever-ascending curve of material accretion into an indefinite future? Upon the answer depends in part the relation of water powers to the future of the race.

An industrial age of necessity, first and foremost, must be an age of power transformation. Increased production of raw materials involves the use of more power in winning them from their primal condition. More manufactured products demand more power for their fabrication. Greater activity in transportation is at the expense of more power. The growth of cities with their electric lights, water supply and transportation systems, increases greatly the per capita demand for power. To whatever degree may grow production, transportation and the enjoyment of material comfort, to even a greater extent will grow the use of power. But power development to-day has one ominous significance, for it is effected most exclusively by the consumption of a waning supply of coal.

For the first time in the ages that man has occupied the earth it dawns upon his quickened intelligence that the cunning of his brain and the strength of his hand unrestrained and unintelligently guided tears down more rapidly than nature restores, and that it is high time for the civilized people of the earth to safeguard their natural resources against inevitable and lasting destruction. What is the way out? How shall leaping demand be met by a waning exhaustible supply? Intelligent forestry will insure the timber supply indefinitely. The fixation of atmospheric nitrogen, intelligent manipulation of crops and preservation of soil covering will maintain the food supply. The use of various synthetic substances will relieve their natural prototypes. The application of Portland cement as a structural material in new fields, the growth of water transportation possibly at the expense of railways and the wider use of other metals and their alloys, may put forward the dearth of iron indefinitely. But every tendency is toward the increased rather than the diminished use of power, and how shall the burden be shifted from coal to some other source of energy?

Here, then, is the aspect in which water powers present their profoundest importance. They are the only known future great sources of power in an age shackled to an increasingly lavish expenditure of power.

Water Powers as Natural Resources

Water powers, considered as a natural resource, have one distinguishing characteristic—they waste only in their non-use. Every

year of idleness means the exhaustion of a comparable amount of coal and iron, and the loss of potentially useful energy that can never be recovered.

Water powers are eternal, and will exist as long as the sun shall shine, and moisture is evaporated, transported and lifted by wind, congealed by cold and pressure, and precipitated upon the land by gravity. Indirectly but none the less disastrously, however, man can ruin the utility of water powers by destroying the forests which store the rain at the stream sources, protect the surface from erosion, and the valleys and reservoirs from deposition. The useful application of water powers may be marred or prevented by the prior vested rights of railways or other structures occupying land needed as sites for dams, reservoirs, or conduits, by the construction on river banks of lateral canals for navigation, or by the initial construction of works which, while providing for only partial development of the full potential power of the stream, or by reason of faulty design, are incapable of expansion or additions within limits of reasonable expense and bearable sacrifice.

The Relation of Government to Water Powers

There is much misunderstanding of the nature and degree of federal control of water powers. The fact that powers on unnavigable streams in no manner fall under government supervision, is generally understood. But it is a common fallacy to suppose that powers on navigable streams are owned by, or in some manner are administered by, the government at Washington.

The United States, of America, organized by the thirteen original sovereign states, possess only such powers and authority as were expressly conferred by the constitution. The relation of the federal government to streams rests upon expressly conveyed power "to regulate commerce with foreign nations and among the several states and with the Indian tribes." All other properties and functions of navigable rivers, apart from those involved in the regulation of commerce, their beds, the potential energy of the water and the water itself, and all properties of unnavigable rivers are withheld by the several states unto themselves, and this has been frequently affirmed by the supreme court. As conservator of navigation, the federal government can restrain any state or citizen acting under authority of the state from using the bed, transforming the

energy of the water, or otherwise using state or private property on a navigable stream, if the contemplated use jeopardizes navigation. Furthermore, constitutional prohibition restrains the national government and many of the states from engaging in the commercial enterprise of owning and constructing water power works.

The problem of preserving to the people their equities in natural resources including water powers will soon have to be met. Are private corporations to enjoy sole possession thereof in perpetuity? At the present time, in the absence of substantial co-operation by the government in the initial expense of development, the investor will be deterred from risking his money unless the entire resulting profit for all time is to be his exclusively. The fact that the national government and some states are preserving forests at the sources of power streams, a necessary step to their permanent use as such, is pertinent as bearing upon the possible limitation of private ownership in water powers.

The Government of Ontario, Canada, is to become a purchaser of Niagara power on a grand scale, and will distribute and sell. Sweden both leases and develops its powers. The smaller political divisions of Norway build and operate powers, while Germany, as well as other countries, collects power royalties from users of streams.

It is not unreasonable to anticipate that greater control, and possibly the actual exploitation, of water powers may become a recognized function of our less paternal government. This would require constitutional sanction to be true, and in the meantime, we may expect to see much ingenuity exercised by the federal government, under the pretext of conserving navigation, both in wise restriction of private water power enterprises on navigable streams, and in some manner contributing to the success of other power developments whose beneficial effect will be sufficiently far reaching.

To the Southern States such considerations are all important, for a large part of their immediately available water powers are on navigable streams, and already on two of her greatest rivers the development of power awaits favorable action by the government relative to problems in navigation.

Advantages in the Use of Water Power

Water power is universally transformed into electrical power. Converted and transmitted as such, the horizon line within which

it may be practically applied stretches away 100 to 200 miles from the hydraulic station, and, with time and improvements, will be much farther.

The relative direct costs of power production by hydro-electric and steam plants are as various as the possible combinations of elements which enter into each and the places and peculiarities of power demands. For instance, where power is required at a uniform rate throughout a twenty-four-hour day, as is the case in many milling and electro-chemical industries, water power, on account of its cheapness, is the only possible source of energy. On the other hand, if the use of power is great and covers a period of ten hours daily, fuel is good and cheap, and high economy boilers and engines are employed, steam not infrequently may be used as cheaply as hydro-electric power, particularly if the latter is transmitted over a distance. In hydraulic plants where the natural delivery of the stream is relied upon without the aid of storage it may cost practically no more to develop a twenty-four-hour horse power than a ten-hour horse power; while in the case of steam plants one may be double the other. A fair idea of the comparative direct costs of steam and hydro-electric power is conveyed in the statement that eleven-hour steam power costs in the South \$20.00 to \$60.00 within the ordinary range of fuel prices, effectiveness of different types of boilers and engines, hourly and monthly variations in demands for power, capacity of plants and effectiveness in management. Hydro-electric eleven-hour power costs correspondingly for generation and transmission \$12.00 to \$24.00. None of these figures represents extremes. The price paid by the customer per horse power delivered by the hydro-electric company may be depended upon to be ordinarily fifty per cent to seventy-five per cent of the direct cost of its generation by the independent steam plant.

Critical analysis of the advantages accruing to the user of hydro-electric power is possible only in the light of industrial requirements governing modern manufacturing industries, where the absorbing ambition is to produce and market the maximum volume at the lowest cost per unit of product. Hence we find differences in direct cost of power are relatively unimportant except in industries where the great use of power makes it a principal factor. Of greater importance are considerations involved in the application of power.

The use of electric power purchased of a distributing company is in consonance with that fundamental tendency of modern manufacturing toward the subdivision of labor and concentration on the fewest possible operations, removing the independent steam plant with its many complications from the solicitous care of those to whom power transformation is only means to an end.

The impossibility of restricting the delivery of hydro-electric power by adverse combinations of labor or capital affecting the source of energy and complete independence of railways and their physical limitations in the delivery of fuel and the fixing of transportation rates therefor, contribute to certainty and uniform conditions of power supply. The elimination of the multitudinous parts of a steam plant subject to incessant renewals makes for a minimum of interruptions. A recording electric meter placed upon each significant operation of a mill enables that differentiation and comparison of activities necessary to an intelligent improvement in the economics of production. There is saving in ground and floor space, frequently not to be had in case of required additions to steam plants; ability at all times to meet increased demands for power without delay or measurably increased investment therefor, and no necessity for power plant extensions, the capacity and cost of which may be wholly out of proportion to the increased demands for power.

Soft coal smoke has been a necessary evil accompanying the blessings of prosperity. In industrial communities it vitiates the air and thus is hygienically bad, obscures the sun for days, thus depressing the spirits and the play of the imagination, and burdens the people with the support of the thousands of cleaners of one kind and another. We may never know to what civic pride we might have attained, and in what exquisite homes, gardens, architectural structures, furnishings and decorations we might have expressed that pride, could they have been free from the black destructiveness of coal dirt. It is only those communities wherein "white coal" shall turn the wheels of industry that may hope to deserve the appellation of the "Sunny South."

Commercial Limitation of Water Powers

The business of transforming and distributing hydro-electric power is one requiring usually large investment, and is an extreme

type of that class of enterprises in which the first investment is wholly out of proportion to the initial demand for the product and the resulting income. The operating expense, maintenance and depreciation of any plant are usually minor considerations, compared with the fixed interest charges, and are practically independent of the amount of power generated and transmitted. These are the all powerful factors influencing the practices of water power companies and their relation to the public. Companies are forced to search for large power consuming industries to be installed coincidentally with, or quickly following, the completion of the power plant, and to such customers, power is sold at extremely low rates to be balanced later by sales at higher rates for superior uses. Consequently, the effect is to introduce to the locality new industries and later those which consume their products or provide their wants, which, were it not for the presence of developed power, never would have become established there by any possibility.

Such conditions are the explanation of, and defense for the contention that rates for the government of power companies should not be fixed by legislation. They also in part explain the advantages that result to the community by restricting the business of power generation in any section to a single company, for, without the promise of later high-priced business to support the large output of low-priced power, there would be no sufficient inducement for the projectors. With more than one company in the field, this adjustment of rates would be difficult, if not impossible.

Interest on investment, sinking fund, management and depreciation are the chief, and frequently the only measurable operating burdens, and all within wide limits may be independent of the amount of power developed and marketed. Consequently, the greater the output of power by any company, and as a corollary the fewer the companies in any field, the cheaper the unit of power can be produced and marketed.

Greater utilization of this exhaustless natural resource, conversely less waste; cheaper production and more reliable service are the merits which tend to make the single water power development a beneficial monopoly in any district, and it would seem as if natural commercial exigencies beyond the control of the corporation guaranteed minimum rates for its patrons.

These severe limitations and very unusual conditions have

made of water power development a business peculiar to itself. That this has been too little appreciated by the pioneers of the industry is well reflected by the statement of an officer of the Engineer Corps, United States Army, that in his examination of water powers as investments, he never had found the man who for the second time was an investor in this class of securities.

It is to be hoped that government officials whose co-operation is necessary to the development of water powers in the South will be keenly appreciative of these restrictive commercial peculiarities, and be governed accordingly, the fact being that to a great extent in the South, power enterprises, particularly the larger ones, must be exploited in regions where the industrial advantages are chiefly potential, and responsibility for the prosperity of the section rests upon water power development, and the ability and determination with which it may be prosecuted.

Physical Limitations of Water Powers

Work is the product of force by the distance through which force acts. Energy is the ability to perform work. Force in the case of water powers is represented by the weight of the water, and consequently the flow, while distance is represented by the vertical space through which the water drops, and consequently the fall or head. The layman frequently analyzes the physical features of a water power no further than this, but these to be practically utilizable must possess many favorable attributes. The flow must be copious, depending on the area of the watershed and the amount of annual rainfall. It must approach uniformity in some degree, secured by favorable seasonable distribution of rain storms, or by natural or artificial storage. The stream fall at the site of power developed should be great within a limited distance. The topographical conditions at the power plant site should lend themselves to the construction of a regulating reservoir at least large enough to accommodate the day and night fluctuation, and to the construction of hydraulic works, such as dams, conduits and tail races, within permissible limits of expenditure. Where regulating or storage reservoirs are a necessary feature of any development, the stream must not carry silt sufficiently gross to fill or encumber these.

Irregularity of flow, yearly and seasonal, is possibly the commonest and most discouraging limitation. It is low stream flow, as

distinguished from average high flow that measures the amount of power which it is practicable to develop. Consequently, any characteristic of a watershed which may be utilized for, or contribute to, raising or extending the seasonal minimum, reducing the severity of drought has the highest possible value. Here intervenes the incalculable benefit of forests, for they are the greatest and practically the only natural reservoirs for rainfall. Furthermore, by protecting and fostering soil covering, and withholding floods, they prevent the burdening of the streams with silt, thus contributing directly to the feasibility of artificial reservoirs.

Proximity of the water wheels to the place of application of the developed energy was the ancient limitation of a water power, the maximum distance being the span of a leather belt. To-day it is fixed practically by only a single factor, namely, the permissible expenditure for an electric transmission line, the resistance and losses of which shall be within the limits of good regulation, say ten per cent. One hundred and fifty miles is becoming an ordinary maximum. The projected enterprise on the Zambesi River, South Africa, contemplates transmitting from Victoria Falls to Kimberly mines, 600 miles.

We shall see later, in considering the attributes and distribution of southern water powers, that as a rule they possess favoring physical conditions to a remarkable degree, and though remote from centers of industry, we have the satisfaction of knowing that this handicap is one of degree, and is yearly becoming less restricted.

Southern Water Powers

The Census Bureau reports as employed in all manufactures during the year 1905, 14,500,000 horse power. The Secretary of Agriculture in a late report states that the estimated utilizable water power, based on the minimum flow for six high water months without storage, is 5,000,000 horse power on the streams proceeding from the Southern Appalachian Mountains, one-tenth of which has been developed. This by others is estimated to be equivalent to two and one-half times the present developed water powers of the whole United States and half the total undeveloped utilizable water power, and probably even this vast amount of potential power could be doubled by storage. Assuming an average developable capacity of 1,250 horse power, the southern powers would number 4,000. It

is clear that anything approaching a description of, or even a definite reference to, particular water powers, with such a vast number to deal with, is wholly impracticable in such a paper as this. The only suitable presentation is to analyze the broad distribution of these powers, and to treat any particular district as of importance only when such universally favorable conditions for the development and use of power exist as will probably determine the future industrial life of the region.

Water power sites may be said to have a habitat like wild animals. They may be searched for intelligently, as the sportsman hunts mountain sheep among the crags, bear in the canyon, elk and caribou close to the timber line on the long powdery snow-covered reaches of the plateaus. Geology bears a relation to distribution of water power sites, comparable to the effect of climate in determining the natural abode of wild animals. Rainfall is comparable to the flora.

From the Cumberland plateau and the lofty Appalachians with their generous rainfall, the waters flow west, south and east, in tiny rivulets to make larger streams; these flowing together to make the great rivers. Everywhere these rivers descend abruptly and with great volume from the hills to the level stretches of the lower lands, and here is where are to be found the greatest water powers. Far above these so-called "shoals" in the mountainous headwaters, the precipitous stream beds and small tributary watersheds account for numerous small powers. Below the shoals or "fall line" the rivers in great volume flow placidly over the flat coastal plain and no powers are possible. The happy combination of great volume and ample fall occurs at the fall line. From these considerations, it might be foretold that the Mississippi River south of the Ohio is not a power stream. As a matter of fact, there are no power sites south of Keokuk, Iowa.

The tributaries entering the Mississippi River from the west, where they lie within the southern states may give an occasional water power site under favoring local conditions, but there are no universal opportunities for available water powers. Turning now to the eastern tributaries of the Mississippi, we may exclude the Ohio from consideration here, together with its network of streams above the confluence of the Cumberland and the Tennessee, because it barely touches the rim of the region under discussion, and does not present there any strong water power characteristics.

At the Cumberland, however, we enter the abode of water powers, which includes all that region in southeastern Kentucky, the eastern half of Tennessee, the northeastern half of Alabama, the northern half of Georgia, the western half of the Carolinas and all of Virginia, save the eastern portion.

Within this area with their tributaries as a rule heading in the mountains and in part taking rise in the high plains which everywhere fringe the mountains are the great power streams, the Cumberland, Tennessee, Coosa, Tallapoosa, Chattahoochee, Ocmulgee, Oconee, Savannah, Saluda, Broad, Wateree-Catawba, Pee Dee, Roanoke and the James. These segregate naturally and by industrial requirements into three main power districts which may be termed western, southern and eastern. The first is as yet wholly undeveloped and lies about the South's great iron and coal district, the seat of which is Birmingham, Ala. The second is already well exploited and lies along the Chattahoochee from Columbus, Ga., north to Atlanta. The third is the most fully realized, a third of the easily available power being already developed. It lies in the favored agricultural district of northern South Carolina and southern North Carolina, stretching north from Columbia 200 miles. The Saluda, Broad and Wateree-Catawba rivers are its principal sources.

The Cumberland's main stem in southeastern Kentucky and the Caney Fork tributary in central Tennessee are good power streams. It is practicable to develop 20,000 to 30,000 twelve-hour turbine horse power at a single site on each. Cincinnati, Louisville and Chattanooga are 125 to 150 miles from one, and Nashville, Huntsville and Knoxville sixty to seventy-five miles from the other.

The Tennessee River is synonymous with water power. Where the three great rivers, the Ohio, Cumberland and Tennessee, join, the Tennessee is credited with contributing from an area almost as great as England a volume of water as great as the Ohio and Cumberland combined. The topography of the upper watershed lends itself to the construction of numerous great reservoirs at permissive cost. According to the United States Geological Survey, this river and its tributaries, French Broad, Little Tennessee, Clinch and others, possess a third of the available water power of the entire Southern Appalachian Mountains, beginning with the Potomac River on the east, and taking in all the great streams entering the

Atlantic, the Gulf of Mexico and the Mississippi, around to the Cumberland River on the west. In storage possibilities it possesses alone more storage capacity than all the other streams and their tributaries combined. The total potential power of the system, estimated on the basis of the minimum flow for six high water months during the past seven years, is 1,000,000 turbine horse power. It is believed that practicable available storage will enable this to be more than trebled ultimately.

At Muscle Shoals, close to the fall line, in northwestern Alabama, with tributary watershed of 29,000 square miles and 10,000 second feet minimum mean fortnightly flow, the river tumbles down 130 feet in thirty miles between high rock walls, a foaming shallow mass of water one and one-half miles in width. The development and transmission of 100,000 twenty-four-hour horse power delivered to the customer at a remote distance is here practicable without stream regulation. With storage capacity to the amount estimated to be ultimately available, a total generator installation of 500,000 horse power will some day be practicable.

The Tennessee River breaks through the Cumberland plateau at Hale's bar below, and thirteen miles from Chattanooga, and here is now being installed a hydro-electric plant of 50,000 horse power. A great number of valuable power sites are to be found on the tributaries of the Tennessee where they ramify and cover practically the whole western slope of the Southern Appalachians. A notable example is on the Little Tennessee, forty miles from Knoxville, where an available head of 175 feet is securable, and an installation of 30,000 to 40,000 horse power practicable.

One has only to follow the fall line to encounter many valuable water powers in Alabama. These belong chiefly to the Alabama River drainage, emptying at Mobile, and are not all properly Appalachian streams, although for the most part their sources are in the extreme southern slope of these mountains.

Wetumpka on the Coosa and Milstead on the Tallapoosa, fifteen and thirty miles respectively from Montgomery, mark the intersection of these streams with the fall line, and for miles above occur the finest power sites in Alabama south of the Tennessee River.

The Coosa River above Wetumpka falls 367 feet in 142 miles, and the run-off data indicate that on the basis of a sixty per cent

load factor, and without impounding more than is locally practicable at the power house sites, the stream is capable of accommodating about 100,000 horse power of generating machinery. However, any project here is complicated by the fact that the Coosa is a navigable stream, and has been only partially dammed and locked by the national government.

The Tallapoosa River has a watershed of nearly 4,000 square miles above Milstead. There are two power plants three and one-half miles apart working under a total head of 100 feet, while seven miles farther above there is an available power site where the erection of an impounding dam makes practicable a head of 120 feet. The opportunity here for storage is almost unexampled, and makes available within this short stretch of river, as the result of careful computation, based on many years' stream gaugings, the great total of 100,000 eleven-hour horse power transmitted to the consumer.

A mere summary of the physical conditions surrounding the Chattahoochee River is sufficient to indicate its possibilities. It crosses the fall line at Columbus on the boundary line between Alabama and Georgia, above which point it has 4,900 square miles of watershed, and a mean minimum fortnightly flow of 2,000 second feet. From West Point to Columbus, thirty-five miles, the river falls 362 feet, flowing for a large part between high rock walls relatively close together. Practically fifty per cent of the available power of the entire system may be developed on this section of the river. The strikingly favorable features do not end here, for 140 miles above West Point are admirable power sites, notably those in the neighborhood of Bull's Run. It is not astonishing then that this stream should be one of the best exploited in the South. The present installations employ 200 vertical feet. Columbus, at the head of navigation, styling itself the "Electric City of the South," has many cotton and woolen mills. Atlanta relies chiefly on this river for its light and street railway uses. Geological Survey estimates credit the Chattahoochee with 230,000 potential turbine horse power on the basis of six high months' minimum.

The Flint, Ocmulgee and Oconee rivers cross the fall line in central Georgia; the two latter, at Macon and Milledgeville respectively, have limited watersheds and do not take their rise in the mountains, but possess relatively steady flow and good power sites. The former has shoals all the way down to Albany.

Georgia's eastern boundary, the Savannah River, is even a greater power stream than the Chattahoochee, forming a part of the state's western boundary. It leaves the archaic rock at Augusta, to which point is tributary 7,200 square miles of watershed, and a mean minimum fortnightly flow of 4,200 second feet. Augusta was at one time the third city of the Union in the use of water power, the municipality having begun its development as early as 1845. To-day it is one of the great cotton manufacturing centers of the world, appropriating approximately 24,000 horse power to this service. Seven miles above the city a ten-foot dam delivers to a canal which provides forty-five feet head at the mills.

Within a distance of ninety-three miles above the dam, there are seven power sites on the main stream and tributaries, employing 383 feet of fall. A carefully studied plan for their utilization provides for installing generator capacity of 150,000 horse power. Engineering skill of a high order prepared the project and it is interesting to note that the proposed installation of 150,000 horse power is practically equivalent to the Geological Survey estimates of turbine horse power on the same stretch of the river, based upon the minimum of six high water months, namely, 139,000 horse power.

If we credit the Savannah River to the State of Georgia, there is left as strictly South Carolinian, only one great power stream, namely, the Santee. This is due to the fact that the fall line crosses the northwestern part of the state, interesting herein only the tributaries of this one Appalachian stream. The Pee Dee flows for the greater portion of its length in South Carolina, but enters the state only sixty feet above tide level.

The region from Columbia north for 200 miles, a belt of approximately 150 miles in width, including roughly equal areas in northern South Carolina and southern North Carolina, is at once the greatest water power and the greatest cotton manufacturing region in the South. Here are manufactured one-half of the southern cotton goods. Above Columbia, marking the fall line, there are 4,800 square miles of watershed on the Broad River with estimated 130,000 turbine horse power and 2,300 square miles on the Saluda, credited with 60,000 turbine horse power. On the Broad at and above Columbia, 25,000 horse power is developed at three sites, on a total head of eighty feet, supplying cotton mills chiefly. Four

new enterprises are projected, employing 180 feet head, for a total development of 60,000 horse power. There still remain 250 feet head unappropriated on the main river with substantial area of watershed available. On the Saluda 25,000 horse power is developed at six sites, with a total head of 200 feet, used by cotton mills far and near. Two new plants are projected for the development of 15,000 horse power on an 80-foot head. Nearly 500 feet of head as yet is unexploited within the limits of substantial flow.

Camden, the fall line of the Catawba or Wateree River, with 4,400 square miles tributary water shed, lies near the foot of shoals which descend sixty-five feet in six and one-half miles, capable without storage of development of 20,000 turbine horse power. The stream above will be able ultimately to accommodate 150,000 horse power of generating machinery without stream regulation, and one corporation alone owns five valuable power sites with 262 feet total head in this stretch, two of which have been developed for long distance transmission to the mills of the surrounding region. There are left in the practicable portion of the river only 100 feet unappropriated.

The Yadkin River powers naturally should be considered in connection with the tributaries of the Santee just reviewed, for the reason that together with them, it is favorably situated to foster the same cotton mill section. Above Cheraw, S. C., the head of navigation, the river has a fall of approximately 600 feet in 120 miles. In this section occurs eighty per cent of the total developable power of the stream and tributaries, namely, 100,000 horse power minimum. In this section are the Narrows, which in some respects mark the most striking water power site in the State of North Carolina. The Tar, Neuse and Cape Fear are not Appalachian streams and do not possess such strongly marked power characteristics as to warrant reference here.

At Weldon on the Roanoke are combined commercial and physical advantages which make this point one of great merit for power development. The tributary watershed is 8,200 square miles with mean minimum fortnightly flow of 4,000 second feet. The storage opportunities on the upper portion of the river and its tributaries are excellent. Above Weldon the stream falls eighty-four feet in nine miles, and two companies have constructed hydraulic works covering practically the whole head, capable of

developing 16,000 horse power. The section of the Roanoke River between Weldon and Clarksboro, Va., at the junction of the Dan and Staunton Rivers, a distance of seventy miles, and a fall of 250 feet, embraces three-quarters of the power possibilities on the Roanoke River, and should warrant ultimately the installation of 100,000 horse power of generating machinery.

The James River in Virginia is the remaining water power stream of strictly southern significance. The best portion is immediately above Richmond, where, with a drainage area of 6,800 square miles, and a fall of 125 feet in fourteen miles, one-third of the total power of the stream may be developed. At Richmond, under a head of approximately twenty-five feet, about 20,000 horse power of generating equipment is installed. The topography of the watershed is favorable to the establishment of reservoirs, and this fact and the presence of many favorable power sites, and the excellent section of country through which the river flows, will no doubt combine to make the James one of the great power streams of the future, whereon may be realized the limits of its capacity, say 250,000 turbine horse power. The mountain tributaries, of all such streams as have them, possess many small and a few large power sites notably in northern Georgia.

The water power region of the South is a vast empire, great in natural advantages. It is a land of opportunities in manufacturing as in agriculture. The productive capacity of the people is great when once they become industrial factors, but their numbers are few. The possibility, indeed the certainty, of development in the South, that many of us will live to see, is suggested in the following comparison between two great power sites, one where works of 100,000 horse power are under construction on the Susquehanna River in Pennsylvania, the coal and iron state of the North, and the other on the Tennessee River in Alabama, the coal and iron state of the South. Respectively they have 27,400 and 29,000 square miles drainage area, 610,000 and 508,000 second feet flood discharge, 2,700 and 8,500 second feet absolute minimum flow, fifty feet and 120 feet net head available for the turbines; the one has torrential floods and no forests about the headwaters, the other has relatively gradual rises and a forested watershed; all to the relative advantage of the southern power. But, in respect to the industrial conditions, a circle of 3,600 square miles about the Pennsylvania site includes

over 2,000,000 people and 750,000 horse power in steam plants, and a circle of 7,500 square miles about the Alabama site includes less than 350,000 people and 70,000 steam horse power. In short, the one section, as compared with the other, employs sixteen times as many people and uses twenty-two times as much horse power per square mile.

Is this relative condition in the South to be interpreted as discouraging? No, for it will change, and change rapidly. The South to-day compared with the rest of the country of twenty-five years ago is producing as much pig iron, mining twice as much coal, has more miles of railway, greater value in farm products, equal value of exports and sixty per cent as much capital invested in manufactures. Southern commerce has grown fifty-six per cent in five years. In this inevitable and swift industrial growth lies the message of southern water powers to the world at large, for not only will their exceptional qualities speed this growth, but the increase of industries will react to produce new incentives to the greater and still greater development of this great resource. Herein lies the interpretation of southern water powers.

SOUTHERN RAILROADS AND INDUSTRIAL DEVELOPMENT

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Prior to 1880 the southern states were almost exclusively agricultural communities. The industrial development that has occupied such a prominent place in their economic history since that year has been coincident with railway development.

This has not been a mere accident. It has been the necessary outgrowth of that intimate relation which, in our modern civilization, must exist between production and transportation. The railways of the South that survived the Civil War were generally roads that had been constructed primarily as carriers of cotton to the seaboard and of manufactured products and food supplies to the cotton states. They were scarcely adequate for that service and would have been utterly inadequate for handling the increased volume of traffic brought about by the multiplication of manufacturing establishments, the development of mineral and timber resources, and the growth of industrial communities throughout the South. Conversely, railway development in the South since 1880 would have been much more restricted if it had not been accompanied by an industrial development. Just as the railways of 1880 would have been unable to handle the present volume of southern traffic, so the present railway system of the South could not have been created if it had to depend on a volume of traffic no larger than that of 1880.

The extent of this interdependent growth since 1880 can be shown by some comparative statistics. Between 1880 and 1905 the total volume of the products of manufacture in the states south of the Ohio and Potomac and east of the Mississippi increased from \$287,110,628 to \$1,135,468,795, or 295 per cent. The increase was really considerably greater than is indicated by these figures, for the reason that the census of manufactures of 1905 included only those conducted on the factory system and omitted small estab-

lishments and what are classed by the Census Bureau as "neighborhood industries," which were included in 1880.

This increase in manufacturing has embraced a large variety of industries, but it has naturally been greatest in those industries drawing their raw materials from the South. Thus, in 1880 there were only 561,360 cotton spindles in the South, and in 1908 there were 10,200,903, an increase of 1,717 per cent. In 1880 southern cotton mills used only 188,748 bales of cotton and in 1908 they used 2,187,096 bales, an increase of 1,058 per cent. From practically nothing in 1880, the cotton-seed crushing industry of the South has grown until, in 1907, it crushed 3,843,981 tons of seed, producing 175,724,840 gallons of oil and 1,785,804 tons of cake and meal. Pig-iron production in the southeastern states increased from 335,864 tons in 1880 to 3,033,388 tons in 1907, or 803 per cent. Coke production increased from 372,436 tons to 9,289,471 tons, or 2,394 per cent. Coal production increased from 3,793,308 tons to 84,978,700 tons, or 2,140 per cent, and the lumber cut increased from 2,652,015,000 feet to 11,899,984,000 feet, or 348 per cent.

While this great industrial advance has taken place southern agriculture has not stood still. Leaving out of account the enormous increase in agricultural production in the newly-settled regions west of the Mississippi River, in the states east of that stream cotton production increased from 3,816,250 bales in 1880 to 7,444,805 bales in 1908, or ninety-five per cent, and corn production increased from 331,105,000 bushels in 1880 to 452,324,000 bushels in 1908, or forty-six per cent. This same period has witnessed a large increase in the production of fruits and vegetables in the southern states, both for northern markets and for local use.

Both southern agriculture and southern manufacturing have had their greatest development in the production of commodities in demand in other parts of the United States and in other countries. Such development is possible only when means exist for carrying products which cannot be consumed locally to markets where they are in demand. Therefore, as an inevitable consequence of the very large industrial development and the considerable increase in agricultural production, the railways of the South have been called upon to transport a rapidly increasing volume of traffic. In 1880, according to Poor's Manual, there were 14,817 miles of railway in the states south of the Ohio and Potomac and east of the Missis-

issippi. In 1890 there were in this territory 24,535 miles, and in 1907, 39,068 miles, showing an increase of 164 per cent over 1880 and fifty-nine per cent over 1890. In 1890 there were less than thirty miles of double-track railway line in all this territory. In 1907 there were 1,321 miles of double track, and the total mileage of operated tracks, including single tracks, second tracks, yard tracks, sidings and spurs, increased from 27,830 miles in 1890 to 50,533 miles in 1907. The number of locomotives increased from 3,310 in 1890 to 7,400 in 1907, or 123 per cent, and the number of cars of all classes in service increased from 109,669 to 293,230, or 167 per cent. This increase in the number of locomotives and cars has been accompanied by a very considerable increase in the average tractive power of locomotives and in the average carrying capacity of freight cars.

Southern agricultural and industrial growth will continue largely along the line of the greatest development in the past—that of producing commodities in demand in other regions. Cotton has not only been the most important agricultural product of the South, but it is the foundation of two great and growing southern manufacturing industries—the cotton textile industry and the cotton seed crushing industry. The limit of cotton production has not nearly been reached even in the older cotton states east of the Mississippi. As the world demand for cotton textiles and cotton seed products increases the South will meet it with a larger production due not only to bringing additional land under cultivation but also to an increased average yield per acre, brought about by more intensive farming and scientific crop rotation. The cotton mills of other lands and of other sections of the United States will continue to draw on the southern crop, but, as a result of the economic force tending to draw the industry to proximity to its source of raw material, we may expect the multiplication of spindles and looms to proceed more rapidly in the cotton growing states than elsewhere. The rate at which the cotton mill is being drawn to the cotton field is shown by the fact that, while in 1880 the consumption of the mills in the cotton states equaled only 3.28 per cent of the crop of 5,755,359 bales grown in that year, in 1908 it equaled 15.62 per cent of the crop of 13,697,310 bales grown in that year. Cotton seed crushing will continue to be distinctively a southern industry and its growth will keep pace with the growth of cotton production.

What will be true of the cotton textile and cotton seed industries will be true, to a greater or less degree, of other industries based on the conversion of southern raw materials into finished commodities. The South has no monopoly of iron ore such as it has of cotton, but southern iron and steel can profitably be put into competitive markets and are furnishing raw materials for an increasing number of southern industries in which iron and steel, either by themselves or in combination with wood and other metals, are manufactured into finished commodities. Neither has the South a monopoly of timber, but the wasteful cutting of the timber of other sections and the advancing price of forest products are making the woodlands of the South constantly more valuable and drawing woodworking establishments of all kinds to that section. Furniture manufacturing, the making of spokes and handles, the building of wagons and other vehicles, the manufacture of sash, doors, and blinds, of mantels and other interior woodwork are already extensive and well-established southern industries, and will continue to grow as will also the conversion of southern woods into pulp and paper. Among other industries destined to continued growth in this region of vast and varied resources may be mentioned the tanning of native and imported hides and the conversion of leather into finished products, the manufacture of glass, of pottery, and of building bricks and fire bricks, the mining of coal and the quarrying and dressing of marble, granite, and other building stones.

Bearing in mind the fact that this industrial advance will be accompanied by increased agricultural production, including a constant increase of the growing of fruits and vegetables to supply the growing demand of northern markets, it is apparent that it must be accompanied by a corresponding development of southern transportation facilities. As profitable production depends on ability to market those products not consumed locally in places where they are in demand, and as southern transportation facilities, by water and by land, are not now materially in excess of the immediate demand for transportation service, more facilities are essential to continued agricultural and industrial growth. Wherever they can be made of practical value waterways should be improved, but, in the main, the South must rely on railways as highways to market, and additional railway facilities are as necessary to unobstructed industrial development as are additional factories.

If it is to be of the greatest practical value railway development in the South in the immediate future must be intelligently planned and systematically carried out. While conditions vary in different localities, taking the South as a whole, the immediate problem confronting the managers of southern railways is the movement of an increasing volume of traffic along already established commercial highways. Therefore, while there may be need for new construction in some localities to meet special conditions, the most pressing general need at this time is the provision of increased facilities for moving traffic on the lines already built and in operation.

Tracks, motive power, and cars are the three indispensable requisites for transportation by rail. Of almost equal importance in railway operation are block signals, adequate platforms and warehouses for the handling and storage of freight, and reasonably commodious and comfortable passenger stations. Monumental passenger stations and other purely ornamental improvements may be desirable from an artistic viewpoint, but they are not essential for the performance of transportation service. Looking into the future and taking account of the natural resources of the South, we can see no reason why the industrial development of that section should not continue for years to come at a rate at least as rapid as that of the period since 1880. If this reasonable expectation is to be realized it will mean a growth in traffic far in excess of the present carrying capacity of the railways of the South, and will call for the concentration of railway resources very largely on the provision of those improvements which will increase carrying capacity.

Of the three primary elements of a railway—tracks, motive power, and cars—each is useless without the other. If a railway is to perform the most efficient service it must possess each of these elements in such ratio to the other two as to obtain the maximum of efficient service from all. In the present stage of railway development in the South, considering the lines of that section as a whole, the most urgent immediate need is for additional tracks and track improvement. Double tracks, passing tracks, side tracks at way stations, adequate and properly arranged trackage at terminals and the improvement of tracks by the reduction of grades and the elimination of curvature all contribute to the efficient operation of the system as a whole. They are equivalent, on a line with heavy traffic, to increases in motive power and cars. A given locomotive

can haul a much heavier load on a straight and level track than on one with sharp curves and heavy grades. Every reduction in grades and curvature is, therefore, equivalent to an increase in the efficiency of motive power. Double tracks on congested parts of the line, passing tracks, and sufficient and conveniently arranged tracks at terminals facilitate the movement of trains over the entire system and reduce the time that must elapse between the loading of a car at a shipping point and its unloading at destination. Such improvements are, therefore, equivalent to increases both in the motive power and car supply of the system making them, and expenditures for their provision benefit all the territory and all the interests served by the railway. In a region of rapidly increasing traffic, such as the South, they are of especial importance.

The interdependence of the railways and of the communities served by them has been fully recognized by the railway managers of the South, and each system operating in that section is endeavoring to build up its particular territory. The railways have been persistent advertisers of the South—of its manifold resources and its abundant opportunities. They have sought to locate farmers, miners, quarrymen, lumbermen, and manufacturers along their lines, and no inconsiderable part of the agricultural and industrial advance of the South is directly traceable to the work of southern railways along this line. As proof that they have not overstated the advantages and opportunities of their section they can point not only to the successful enterprises undertaken and managed by southern men, but also to the numerous instances in which men from other parts of the United States and from foreign countries have gone South and have achieved conspicuous success.

Great as has been the progress of southern industrial growth in the past, it may be said without exaggeration that only a fair start has been made in the development of the industrial possibilities of that section. Its advantages of soil and climate and its wealth of natural resources are daily becoming more widely known. Its future is assured, and its railways will continue to be important and helpful factors in its industrial development.

GOOD ROADS MOVEMENT IN THE SOUTH

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The question of the improvement of the public road has become one of the more important ones of the day, and the cry is now going up from nearly all the states of the South to the state legislatures and even to Congress for better public roads. Our statesmen have for several years been attracted by the question of transportation, but of the three important methods of transportation, railways, water-ways, and roads, the two former have been receiving most of the consideration of these men, and yet the public roads are just as, or even more, important, for the reason that at least ninety per cent of the freight must first be hauled over them.

The people are beginning to realize the great importance of good roads and the enormous saving that such roads will bring to them; they are beginning to demand good roads; and are forcing our public men to take a deeper and wider interest in this most vital question. In most of the states throughout the South the good roads movement has been agitated to such an extent that it is not now a question of, "Do we want good roads?" but, "How can we get good roads?" There are many reasons why this awakening of the people of the South to the great need of good roads, and the great benefit they give to a community, has been late in coming. Yet, now that we are aroused we will attack this problem with the same vigor and determination that we have others, and I am confident that we will solve it in such a way that it will react for great good in the industrial advancement of the South.

When railroading was first begun in this country many people had the idea that there would be little use for the public road in those sections of the country that were traversed by the railroad. Time has demonstrated, however, that railways are simply the main arteries of travel, and public roads are the veins, each being a necessary part of the other in our system of transportation, and that without good public roads, railroads fail in accomplishing

what is required and demanded of them. Improvements in railway transportation facilities have reached a high state of efficiency, while the public highways have in many states been greatly neglected.

From the commercial standpoint the public road question concerns the farmer more than any other class of people, as practically all agricultural products have to be hauled for a greater or less distance over the public road. There is, at present, but little chance of reducing the railway transportation charge on agricultural products, but there is a splendid opportunity in nearly every county of every state in the South to reduce the cost of public road transportation charge on these products. Over many of the public roads of the South it is now impossible for a farmer to haul more than half a ton. It may be that a considerable portion of the road between him and town may be a fairly good road over which he could easily haul a ton or more; but there are too many bad places and heavy grades on the roads where it is impossible for his team to haul over half a ton. Consequently, it is necessary for him to load his wagon for these rough, heavy places and not for the good places.

If the farmer is not over eight miles from the railroad, his team can make a round trip in a day if the roads are not too muddy and there are not too heavy grades. If his team is worth \$2.50 per day, it has cost him at the rate of 62½ cents per ton for each mile. On the railroad it can be shipped to almost any point that the farmer desires for one-fiftieth to one-hundredth of the rate which it has cost him to bring it to the railroad. This is because the science of transportation has been highly developed in connection with railroading and almost entirely undeveloped in connection with the public road. As public road improvement goes on the farmer will find that he can begin to haul from two to four times as much per load as formerly, and in one-quarter to one-half the time, thus reducing the cost per ton per mile from one-quarter to three-quarters of what it cost him over the poor road. In the following table there is given, approximately, the cost of transporting a load of one ton by horse and wagon a distance of one mile over level roads, with different kinds of surfacing. It will illustrate the great saving in public road transportation if improved roads are constructed.

TABLE No. 1

COST OF TRANSPORTATION BY HORSES AND WAGONS, HAULING ONE TON A
DISTANCE OF ONE MILE ON DIFFERENT ROAD-COVERINGS

	Cents
On iron rails	1.28
On asphalt	2.70
On stone paving, dry, and in good order.....	5.33
On stone paving, ordinary condition.....	12.00
On stone paving, covered with mud.....	21.30
On broken stone road, dry, and in good order	8.00
On sand-clay road, dry, and in good order	8.00
On broken stone road, moist and in good order	10.30
On broken stone road, ordinary condition	11.90
On broken stone covered with mud	14.30
On broken stone road with ruts and mud	26.00
On earth, dry and hard	18.00
On earth, with ruts and mud	39.00
On gravel, loose	51.60
On gravel, compacted	12.80
On plank, good condition	8.80
On sand, wet	32.60
On sand, dry	64.00

The figures in the above table of course refer to level roads, but, unfortunately, we cannot in the South make all our roads level, as the topography varies from sea level to over 6,000 feet. It is therefore necessary that most of our roads have some grade in them. In our good roads construction, however, we are advocating the lowest grades possible. At the present time, the many steep hills throughout the Piedmont and mountain sections of the South are a very serious drawback to travel and are a very heavy item of expense in the transportation of farm produce and other products. This fact becomes very apparent when we stop to remember that the weight of a load which a team can haul from country to market is limited, not to what it can haul over the good part of the road, but to what it is able to haul up a certain hill over which the road passes. While a steep grade will often shorten the distance between two points, yet inasmuch as the load that a horse can pull decreases very rapidly with the increase in grade, it is by far more economical to increase the distance and decrease the grade. In the following table are given the loads a horse can pull over different grades, considering as a standard that a horse can pull 1,000 pounds on a level road:

TABLE No. 2

LOAD A HORSE CAN PULL OVER DIFFERENT GRADES¹

On a rise of		Load in pounds	
1 foot in 100 equals	1 per cent grade	.....	900
1 foot in 50 equals	2 per cent grade	.....	810
1 foot in 40 equals	2½ per cent grade	.....	720
1 foot in 30 equals	3⅓ per cent grade	.....	640
1 foot in 25 equals	4 per cent grade	.....	540
1 foot in 20 equals	5 per cent grade	.....	400
1 foot in 10 equals	10 per cent grade	.....	250

As is well known, in loading a wagon it is loaded with the weight that the team can pull over the rough, steep places, and this means very often that, although the greater part of the road is well graded and a load of 1,000 pounds or more per horse can be pulled, the team is not able to pull more than 500 pounds per horse on account of the steep grades. It has been demonstrated that for a short distance a horse can double his exertions and thus pull twice as much; therefore, if we will keep our grades to not more than four and one-third per cent, that is, a little over four feet in a hundred, we would be able to haul a maximum load, unless such grade were too long. It will also be found that the four and one-third per cent grade is the steepest that a road can have without making it necessary to construct water-breaks or "thank-you-ma'ams" across the road. For these reasons we are advocating in the South that the maximum grade be four and one-third per cent. In certain sections of the mountain regions of the South it may be necessary, at first, to increase this grade; but we are urging upon all the counties that the route be surveyed with a maximum grade of four and one-third per cent, and that the steep grade be used only temporarily, as we are confident that the low grade will be found the cheaper in the end.

In the following southern states, Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia there are approximately 502,050 miles of public roads, and there is given in the following table² the mileage by states, together with the miles of public road per square mile of area, and the population per mile of road.

¹From U. S. Dept. of Agr. Farmers' Bulletin No. 136, p. 6.

²Manufacturers' Record, Vol. LIV, No. 26, p. 124, 1909 (Pratt).

TABLE No. 3

State	Population	Area in Square Miles	Total Mileage	MILES OF PUBLIC ROADS	
				Miles of Road per Square Miles of Area	Population per Mile of Road
Alabama	2,250,000	51,998	50,089	0.97	44
Florida	650,000	58,666	17,374	0.34	36
Georgia	2,600,000	59,265	57,203	0.96	45
Louisiana	1,700,000	48,506	24,897	0.54	68
Mississippi	1,750,000	46,865	38,698	0.83	45
North Carolina ..	2,100,000	52,426	49,763	0.95	42
South Carolina ..	1,475,000	30,989	41,830	1.30	35
Tennessee	2,220,000	42,022	48,982	1.17	45
Texas	3,600,000	265,896	121,409	0.46	29
Virginia	2,045,000	42,627	51,812	1.29	39

The number of miles of improved road in these southern states is a very small percentage of the total mileage, but the number of miles of improved roads is increasing very rapidly each year. The total amount of improved roads in these states is approximately 17,690 miles, including macadam, sand-clay, burnt clay and gravel.

There is given in the following table the number of miles of each type of improved road that has been constructed:

TABLE No. 4.

NUMBER OF MILES OF IMPROVED ROAD IN THE SOUTH*

State	Surfaced with Stone	Surfaced with Gravel	Surfaced with Sand, Clay and other Material	Total Mileage of Im- proved Roads	Total Miles of Road
Alabama	425	1,400	75	1,900	50,089
Florida	390	20	600	1,010	17,374
Georgia	500	750	650	1,900	57,203
Louisiana .....	....	50	20	70	24,897
Mississippi	10	125	50	185	38,698
North Carolina ..	400	490	475	1,365	49,763
South Carolina ..	100	200	1,700	2,000	41,830
Tennessee	1,800	2,575	....	4,375	48,982
Texas	1,950	190	55	2,195	121,409
Virginia	800	750	150	1,700	51,812
Total	6,375	6,550	3,775	17,700	502,057

As stated above there are five types of roads being constructed in the South, namely, macadam, sand-clay, burnt clay, gravel and earth roads, the first four representing permanently improved roads.

*Mfrs. Record, Vol. LIV, No. 26, p. 125, 1909 (Pratt).

The macadam road when surfaced is perhaps the best of all improved roads of these four types, provided that bituminous material is mixed with the last three inches of stone to act as a binder to prevent dust, and to relieve wear and tear on macadam made by the tires of wagon wheels and the suction of the tire of the automobile. It is the most expensive of all the roads to build in the South, and there are sections in which there will be little or no macadam road built for many years. We do advocate, however, that in the immediate vicinity of the larger towns the macadam shall be built and where the counties can afford it, a bituminous macadam road should be built throughout the country. On account, however, of the excessive cost of macadam in many portions of the southern states resource has had to be made to another type of road known as the sand-clay road, which when properly constructed has given splendid satisfaction.

This road is supposedly simply a mixture of two parts clay and one part sand, yet considerable skill is required in the mixing of these if the best results are to be obtained. The first southern state to take up the construction of sand-clay roads was South Carolina. Richland County was the pioneer to make these roads by the mixture of sand and clay, and there are now in this county over 250 miles of sand-clay roads, and in the state over 1,700 miles. Lack of material suitable for macadam was the reason this county took up sand-clay roads, but they have proved so satisfactory that not only are these roads being constructed throughout the Coastal Plain Region of many of the southern states, but we are also building them in the Piedmont and even in the mountain sections. As will be seen from Table No. 1, the cost of hauling a ton per mile over a first-class sand-clay road is as low as over the macadam; *i. e.*, eight cents per ton.

Mississippi perhaps contains as little good road material as any of the southern states, and for its macadam work it has had to pay as high as \$9,000 per mile. A new type of road known as the burnt clay road, which consists of surfacing the road with lumps of clay that have been subjected to intense heat and partially burned or baked has been tried. This road is good but not equal to the sand-clay.

Gravel roads are being constructed in a great many portions of the Piedmont and mountain sections of the southern states,

and wherever constructed, if properly drained and graded, make satisfactory roads, although the cost of hauling over them is considerably more than over the first-class macadam.

As shown in Table No. 4 only 17,700 miles of public road out of a total of 502,057, the total mileage of the southern states, have been improved; thus it will be seen that the earth road will represent for many years to come the principal road in the South. The earth roads in every state are capable of being very greatly improved, principally by relocation and by drainage. With the exception of those portions of the South where the earth road is subjected to severe freezes and thaws, this type of road can be kept in good condition throughout the year if properly drained and graded. In order to obtain the best results from the dirt road, it must be kept a dirt road; that is, the surface of such a road should be freed from all rocks and vegetable matter, and crowned so that the center of the road will have a gradual fall to the side ditches of about one to twenty. Any hole that develops in the road should be filled with dirt of the same character as the surface of the road, and in no case should these holes be filled with rock or brush, for to keep the road in the best condition all portions of the surface must be of the same material. The dirt road is also much easier to maintain if, in its location and construction, the sun is permitted to strike it as much as possible. Shade is good for macadam but harmful for the dirt road, inasmuch as it is necessary that the road should dry out as quickly as possible after a rain.

By means of lectures and addresses in the different counties a strong sentiment is being created among the people of the South not only for improved roads, but also for a better class of dirt road, and the results of these lectures can be seen as one travels over the public roads of the South in the better condition of the dirt road in its grade, alignment, width, and general construction. It might be well to state here that all over the South we are advocating a wider road than has been formerly constructed. We wish the roads to average, if possible, thirty feet, so that teams and automobiles can readily pass each other without going into the ditch.

Although in many sections of the South the only method of road construction is by levying a labor tax which requires every able-bodied male resident of a county to work upon the public roads in

his respective township for a certain number of days per annum, yet nearly every section of the South is beginning to consider a direct tax for good roads work. Very few of them have passed any state law requiring a direct tax on \$100 worth of property for use in road and bridge construction, yet nearly every southern state has passed laws permitting the counties to make a direct tax for road construction. There has been a question in many of the states whether a high tax to raise revenue for road construction or a bond issue is the most advisable. I believe that most of the states now consider that bond issues are the best means for raising revenue for improved road construction, and during the past year they have voted or considered bond issues aggregating \$16,026,000. There is given in the following Table No. 5, the amount of bond issues considered by the different states in 1909:⁴

TABLE No. 5

BOND ISSUES CONSIDERED BY DIFFERENT SOUTHERN STATES IN 1909

Texas	\$5,000,000
Tennessee	3,022,000
Georgia	2,110,000
North Carolina	1,640,000
Florida	1,600,000
Virginia	1,196,000
Alabama	850,000
Mississippi	310,000
Louisiana	298,000
Total	\$16,026,000

These bond issues were not considered directly by the states, but by different counties and townships within the states, and illustrate perhaps better than anything else the interest that the southern states are taking in good roads work.

State aid is also being seriously considered by a number of the southern states, Virginia being the first to take up this kind of work. A highway commission has been created in Virginia, and the Legislature has appropriated \$250,000 for improved road work in the state.

In North Carolina a small appropriation (\$5,000) was made

⁴Address by G. Grosvenor Dawe before Southern Appalachian Good Roads Convention, Asheville, October 7, 1909.

to the Highway Division of the North Carolina Geological and Economic Survey for carrying on the good road campaign in the state. Although the amount is small, the Survey is able to give engineering assistance to counties in location and construction of improved roads, and is able to do considerable work along educational lines in many of the counties.

A similar form of state aid is being considered in Georgia, South Carolina, and Tennessee, and I believe that such aid is a very material assistance in arousing the counties and townships to the need of good roads. In North Carolina it has done a great deal in assisting these counties to pass bonds for good road work.

The work of the good roads associations in the different states has very greatly advanced the good roads movement, there being state good roads associations or clubs in Virginia, North Carolina, South Carolina, Georgia, Alabama and Tennessee. We are organizing county and township associations which work in co-operation with the state association, and thus we are able to carry into every section of the state information regarding the value of good roads and how to obtain them. The latest association is the Southern Appalachian Good Roads Association, whose operations are carried on in the five southern states, Virginia, North Carolina, South Carolina, Georgia and Tennessee. By means of publications, lectures and actual demonstration work in improved road construction, this association hopes to be able to advance still more rapidly the cause of good road construction in the southern states.

THE INLAND WATERWAYS OF THE SOUTH

BY J. F. ELLISON,

Secretary, National Rivers and Harbors Congress, Cincinnati, O.

The New South, not the old, self-satisfied South of pleasant memories and tender recollections, that lay ever half asleep basking in her own sunshine, content to raise the cotton supply of the world and to allow her wonderful natural resources of mine and forest to remain undisturbed, but the New South, awakening as a young giant, strong and vibrant, throwing off the fetters of commercial indifference, is at last aroused, or should I say being aroused, to the fact that the beneficent hand of the Creator has given to her more natural advantages than He has vouchsafed to any other part of this great Union.

South of that invisible, but once sharply defined boundary, Mason and Dixon Line, now, thanks be, nearly forgotten, lies a mighty empire, greater in natural resources than the combined empires of Great Britain, France and Germany. Great in the fertility of its soil, great in the undeveloped and hardly touched wealth of its mines of coal, iron and stone, and greater still in the wealth of its forests, where stands to-day the timber reserve of this country, it is greatest of all in the extent of its navigable streams that cross and intersect its states, all winding their way either to ocean or gulf. No similar section of North America, or for that matter of the globe, is so blessed with natural highways and gateways, rivers and harbors, as is the southern group of these United States.

Recognizing that the foregoing is a strong statement, as proof of its correctness, let me present the figures on this subject given in the report of the National Conservation Commission, as follows: In the United States there is a total of 26,410 miles of navigable streams; of this total there lie within the states of the South 18,215 miles of inland rivers, navigable now in part and susceptible of being made so in whole.

Southern Navigable Rivers

Tributary to the Atlantic Ocean	4,567 miles
Tributary to the Gulf of Mexico	5,212 miles
Tributary to the Mississippi River and thence to the Gulf	7,073 miles
The Mississippi River in southern territory	1,363 miles
	<hr/>
	18,215 miles

This estimate does not include the Mississippi River above St. Louis, or the Missouri or Ohio River, the waters of which mark the northern boundary of southern states for nearly 1,000 miles, all joining to make the mighty Mississippi, the "Father of Waters," that flows in a never-ending volume through the very heart of the Southland. Contemplate, if you can, picture in your mind's eye, if it be within your power, what 18,215 miles of navigable waters mean as a commercial asset to the states of the South, for has it not been proven beyond the question of a doubt that water-borne commerce is the cheapest form of carriage known to man? Has it not been proven that transportation charges, which fix the price to the consumer and define the profit to the producer, add nothing to the value of a commodity, but are a tax alike upon both?

Has the South availed itself of this wonderful asset of 18,215 miles of inland rivers that the Conservation Commission has said are navigable waters? No, and again most emphatically no, but it is not the fault of the states of the South, for the federal government has assumed, and rightly so, jurisdiction and ownership over all the navigable waters of the United States. To quote the exact words of Secretary of State Knox on this subject: "The duty of the government to raise its waterways and harbors to their utmost efficiency was determined long ago by the action of the government itself. It invited cities to improve their docks to accommodate large ocean vessels. It held out inducements to railways to bring their tracks to the water's edge and construct terminals for the transfer of freight from cars to vessels. So when the government assumed charge and control of the navigable streams of the interior it entered into a practical contract with the states and communities bordering these streams that their waterways would be

improved to their highest capacity. The states were thereby prevented from improving the streams themselves. Corporate enterprise was forbidden to undertake the canalization of important stretches and fix the cost of their works and franchises on the traffic. The federal government has made its formal and deliberate declaration that it will do this work. That necessarily involves that it will make the improvements adequate to modern needs and possibilities. To do any less would be a mockery and breach of good faith."

"To do any less would be a mockery and breach of good faith." Strong words these from a strong man. Has the federal government kept this faith with the states of the Union? The answer to this question can well be made by using the language of one of the really great men that this nation has produced, Theodore Roosevelt, who said, "The rivers of no other civilized country are so poorly developed, so little used or play so small a part in the industrial life of the nation, as those of the United States." Again strong words that naturally beget the question, "Why have these God-given channels of transportation been so neglected by this government, which is a government of the people and by the people?" The writer, realizing that where there are many men there are many minds, gives it as his opinion that the fault is not with the national government nor with those who represent the people as national legislators, but with the people themselves, for is it not a conceded fact that what the people of this country unite in demanding they receive from the national government? They have demanded a navy, army and pensions to such an extent that this nation, which delights to call itself and be so called by other nations of the earth, a peaceful, mercantile nation, is to-day paying a greater percentage of its total revenues for war and its rewards than is any other. They demanded an Isthmian Canal, not for the reason that there was foreign commerce enough to justify the expenditure of so vast a sum as it will cost, not that there was a merchant marine of our own to use it, but because, with characteristic American optimism, they believed the time would come, as come it will, when our own merchant ships, carrying our own products of field, forest and factory to the markets of the South Americas and the Orient, returning laden with the products of those countries which we use but do not produce, will keep the placid waters of the Panama Canal, our own canal, in

constant motion as they pass to and fro from ocean to ocean. I said this time would come, but it will not be until the inland rivers of the South and all other parts of the country that are blessed with inland rivers have been improved so that they will have become dependable routes to tide water, whether it be on the Atlantic, the Gulf or the Pacific, so that the merchant and manufacturer located in the interior can put his goods on shipboard at rates that will allow him to compete in the open markets of the world with the output of Europe.

Will these inland rivers ever be improved, so that their navigation will be at all times dependable? Aye, surely. When? When the people of this country awaken to the fact, as have already the master minds and builders of railroads, that high noon in railway development has been reached. Mr. James J. Hill, who has recently succeeded to the title of "Colossus of Roads," has said that it would require five billion dollars and a larger industrial army than any of the standing armies of the Old World to put rail lines in condition to carry the constantly expanding commerce of the country. Mr. Hill truthfully adds that neither the money nor the men are available.

Compare these stupendous figures with the half billion dollars named by waterway experts as the sum necessary to improve the rivers and harbors of the nation that have been surveyed and favorably reported upon to Congress by the United States Army Engineer Corps as being worthy of improvement, and the improvement of which would add to the transportation facilities of the sections in which they are located. Has it not been truthfully said that the chief element in the prosperity of every state and nation is the economy of transportation of persons and property, which economy it is conceded by all authorities and proven by all experience is furnished by water? The author has stated elsewhere that

When the people who compose this great republic, from whom all legislative power emanates, realize that with our waterways improved the congestion of the American railway system will be eliminated; that for practical purposes every question of transportation will be solved; that the era of moderate freight rates will be permanently installed and that the many problems that now confront both shipper and receiver, vex the Interstate Commerce Commission and clog our courts will no longer exist, for improved waterways would be rate regulators, the decisions of which would be just and from which no appeal would be possible, they will rise in their might and

demand of their representatives in the National Congress that laws be enacted that will provide and put into effect a national waterway policy, a policy that will require, first, careful examination and close study of all river and harbor improvement projects before the same are undertaken, but, when once undertaken, will provide that the work be carried on steadily and systematically to rapid completion. A policy that will provide the funds necessary; a policy that, if the current revenues of the country will not furnish these funds, will provide for the sale of bonds, the proceeds of such bonds to be used exclusively in the payment of such waterway improvement work as has been authorized by Congress. Such a policy is not a new idea or proposition, except as it applies to our rivers and harbors, for it is exactly in line with the one adopted and put into effect by the government in the building of the Panama Canal. After it was once determined that the canal should be built provision was made to carry on the work to completion as rapidly as money and men could do it, and the money has been furnished by the sale of United States bonds.

The demand of the people for this kind of policy must be a universal demand. After-dinner speakers delight in telling us that there is now no north, south, east or west, but a united people, going forward under the old flag. If this be true, then should the people of all states and sections of states of this Union unite and with one voice make their demands known, never fearing but that they will be granted by the national lawmakers, for be it known to all men that under the great dome of the Capitol of Washington there never was framed and put upon the statute books a law that was not first demanded by the people. Congress never initiates legislation; it only acts when dictated to by the people or those whom the people have put into high places. These national lawmakers, these congressmen, are not a people apart, but of us and with us, willing, as I truly believe, at all times to give to the people that which in their wisdom the people ask; but they are wise men who do not enact legislation that their constituents do not both endorse and demand.

Therefore, I say again that when the people of this country want their waterways improved and say so, and say it at the polls, then will the work commence and not end until every mile of the many miles of inland rivers is put into a condition to bear its full share of transportation burdens.

Then the South, with its vast store of undeveloped resources of mine and forest, the products of which not only require, but

must have cheap transportation from the point where produced to the manufacturer's door to make them valuable, and which her 18,215 miles of *improved* waterways will furnish, will come unto her own. The population of every state will increase, cities will take the place of hamlets and where now is heard only the whir of the cotton gin great manufacturing plants will spring up to convert the raw materials of the land into finished products that will enrich not only the South, but the nation, for that which is to the betterment of one section of our common country is to the advantage of all. Then truly will there arise a new South, equipped to go into the markets of the world and to battle with all the nations thereof to maintain the commercial supremacy of the Union of which it is so important a part.

FUTURE OF THE SOUTH ATLANTIC PORTS

BY THOMAS PURSE,
Secretary, Board of Trade, Savannah, Ga.

This subject is of broad and vital interest to the entire United States. It is due to the almost incomprehensible stride of the diversified products of the field and mines of the South, manufactured into indispensable articles. The South is endowed by nature with greater advantages than any other section of the United States; I might add without exaggeration any part of the known world. These naturally make the South the most interesting field of study. It is situated in the very heart of the American continent, and near the center of that incomparable valley which has been compared by an American statesman to a great giant, "with one hand hanging over the Alleghany Mountains, the other hid in the crevices of the Rockies, his head pillowed upon the Great Lakes of the North, while his feet are bathed in the tepid waters of the Gulf, and surrounded as he is on all sides by the greatest and most diversified agricultural country in the world." Agricultural products are the very foundation of commercial and national greatness.

Except for the toils of those who plough the lea
There would be no need of ship to plough the sea.

Even if we go back to the dawn of civilization, where classic lore scarce lifts the veil of impenetrable darkness, agriculture not only existed as the universal pursuit, but down through all ages it has stood as the one necessary and reliable vocation. This great valley is also surrounded on every hand by inexhaustible coal fields, with mines of untold mineral wealth at her door, and with more lines of railway penetrating in every direction than any part of the earth to assist in gathering up all these vast products and to pour them into the lap of the progressive South. One cannot but pause and after due deliberation and most careful and conservative consideration admit that words are inadequate to express the future of the south Atlantic ports, due to their geographical position and free-

dom from ice and snow which during the winter months is one of the greatest hindrances of quick dispatch.

From 1880 to 1907 and 1908 the inventory of accomplished facts of the southern states, as shown below, by a recent publication of the "Manufacturers' Record," indicate a most phenomenal increase which necessarily is doing much to build up the south Atlantic ports, their natural outlet:

"Value of property has increased from \$7,505,000,000 to \$20,073,686,216, increase \$12,568,686 or 167 per cent. Capital in manufactures has increased from \$257,244,564 in 1880 to \$2,100,000,000 in 1908, an increase of \$1,842,755,436 or 716.6 per cent. Products of manufactures increased from \$457,454,777 in 1880 to \$2,600,000,000 in 1908, increase \$2,142,545,223 or 486.9 per cent. Capital in cotton mills increased from \$21,000,000 in 1880 to \$266,500,000 in 1908, an increase of \$245,500,000 or 1,169 per cent. Capital in cotton oil mills has increased from \$3,800,000 in 1880 to \$90,000,000 in 1908, increase of \$86,200,000 or 2,268 per cent. Production of pig iron increased from 397,301 tons in 1880 to 3,445,221 tons in 1907, increase of 3,047,920 tons or 767 per cent. Coke output has increased from 372,436 tons in 1880 to 9,289,461 tons in 1907, increase of 8,917,035 tons or 2,394 per cent. Value of lumber products have increased from \$39,000,000 in 1880 to \$365,000,000 in 1908, an increase of \$326,000,000 or 836 per cent. Lumber cut has increased from 3,410,294,000 feet in 1880 to 19,303,983,000 feet in 1907, an increase of 15,893,689,000 feet or 466 per cent. Value of farm products has increased from \$660,000,000 in 1880 to \$2,225,000,000 in 1908, an increase of \$1,565,000,000 or 237 per cent. Cotton produced, increased from 5,723,934 bales in 1880 to 10,582,966 in 1908, increase of 4,859,032 bales or 85 per cent. Production of corn, wheat, and oats increased from 577,328,440 bushels in 1880 to 818,318,000 bushels in 1907, an increase of 240,789,560 bushels or 41 per cent. Value of mineral products has increased from \$13,817,930 in 1882 to \$286,818,347 in 1907, increase \$273,000,417 or 1,976 per cent. Coal mined has increased from 6,037,003 tons in 1880 to 94,829,835 tons in 1907, increase of 88,792,832 tons or 1,470 per cent. Iron ore mined has increased from 842,454 tons in 1880 to 6,316,027 tons in 1907, increase of 5,473,573 tons or 649 per cent. Production of petroleum has increased from 179,000 barrels in 1880 to 27,239,057 barrels in 1907, increase of 27,-

660,057 barrels or 15,118 per cent. Phosphate mined has increased from 190,763 tons in 1880 to 2,253,198 tons in 1907, increase 2,062,435 tons or 1,081 per cent. Railroads have increased in mileage from 20,612 miles in 1880 to 67,181 miles in 1908, an increase of 46,569 miles or 221 per cent. Aggregate resources of national banks have increased from \$171,464,172 in 1880 to \$1,100,117,838 in 1908, increase of \$928,653,666 or 541 per cent. Capital of national banks has increased from \$46,688,930 in 1880 to \$162,558,230 in 1908, an increase of \$115,869,300 or 248 per cent."

Then again the outlook for continued progress of the south Atlantic ports is much brightened by the fact that in the matter of service much has been done and is now being done, especially when the lines leading from the seaboard reach, under one management, long distances into the interior. This increased usefulness to the public has been brought about by consolidations and consequent economies in management and improvements in service and terminals. As the smaller concerns pass into strong hands they become links in chains of through communication.

The principal south Atlantic ports show a gain in foreign exports 1900 to 1908 of over 61.2 per cent and a gain of 291.1 per cent in imports. Savannah, Georgia, the most important and largest seaport of the south Atlantic, cleared during the past few weeks the most valuable cargo ever shipped from any southern port and classed among the most valuable ever shipped from any American port. Exports from Savannah for 1900-1908 lacked \$4,696,000 of being as much as those of all of the south Atlantic ports combined, showed an increase of 61.3 per cent in exports, and an increase of 375 per cent in imports.

Recent purchase of the controlling interests of the Central of Georgia Railway with large terminals at Savannah, Georgia, by the Illinois Central Railroad puts the south Atlantic ports in direct touch with the most important cities of the middle West, including St. Louis, Chicago, Omaha and Sioux Falls and many others and traverses that section which is the principal granary of this country. The Illinois Central is dominated by the same interests which control the Union Pacific and Southern Pacific railroads, which two lines traverse the west, northwest and the Pacific slope. The estimated mileage of these various roads and their branches is something over 22,277 miles. Many of our large railroad systems travers-

ing over 20,000 miles of the south and southeastern section of the country are beginning to recognize the future of the south Atlantic ports, as the natural port of entry and export for the south and southeast, being in the path of the world's commerce both foreign and domestic. Then again the progress of these ports will be greatly enhanced by the early completion of the Panama Canal, which will have the effect of bringing to these ports a vast commerce because of their nearness to that great waterway.

THE NEGRO'S PART IN SOUTHERN DEVELOPMENT

BY BOOKER T. WASHINGTON, LL.D.,
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When the first census was taken in 1790, there were 1,903,332 persons living in the southern states, of which 677,275, or 35.6 per cent, were colored. In 1850, the population in the seven southern states included in the original census had grown to 5,851,201, of which the colored portion numbered 2,034,015, or 34.8 per cent. In other words, the ratio of the colored population in these states was still very nearly the same in 1850 that it had been at the first census, sixty years before.

In the meantime, there had been added to the seven original southern states six others including western Georgia. In several of these new states, the proportion of colored people to white was much larger than it was in the older slave states. For example, the population of Alabama was 44.7 per cent colored in 1850, and 48.2 per cent colored in 1900. In Mississippi, in 1850, colored people represented 51.2 per cent of the whole population; in 1900, 58.5 per cent. In Louisiana, in the same year, the colored population was 50.7 per cent of the whole and in 1900, 47.1 per cent. In western Georgia, colored people made up 55.7 per cent of the population in 1850, and 43.9 per cent in 1900. Florida's population was 46.0 per cent colored.

What part has this large portion of the population had in the industrial and commercial development of the southern states? In answering this question, we should bear in mind that the Negro people did not come to this country of their own free will. On the contrary, they were brought here against their will and at a considerable expense, in response to an economic demand,—in other words, to furnish the labor necessary to perform the great and difficult task of settling a new country. What is true of the first Africans who were brought to this country is true to a very large degree of those who were born on this continent. The Negro did not emigrate from Virginia, Tennessee and the other border states

to the far South of his own free will. He went there because he was wanted.

The reason that there are ten millions of people of African descent in the United States to-day is because, at the time that the Negro was brought to this country there was no other people and no other race which, under the circumstances, was able to perform the work as well as the Negro.

Although the first Negro slaves were landed at Jamestown, Virginia, as early as 1619, it was half a century later before Negroes began to be seen in any large numbers in the southern colonies. In the meantime, Indian slavery and white servitude had been tried. The best efforts of the colonists do not seem to have been able to make a good laborer out of the Indian. In the West Indies, where numbers of Indian slaves were sold at different times, as a result of Indian wars in the English colonies, a Negro was worth four Indians in the slave market. For a long time, white servitude and Negro slavery existed side by side in Virginia and Maryland, but at the end of the seventeenth century, the white laborer, particularly in the harder and more difficult tasks of pioneer life, began to give way before the black man. This was not because the white employer preferred the black man to the white as a servant, but merely because,—for the work that was demanded at that time,—the black man was stronger, more enduring, and more easily managed.

In the southern states, like Alabama and Mississippi, which were settled after Negro slavery was established, the Negro was from the first an indispensable factor in the development of the country. It was the labor of the Negro that dug the ditches, cut down the forests, and later helped to build the railways and to open up the mines.

As the rough work of clearing the forests had, to some extent, been completed, there grew a demand in the cities and on the larger plantations for a class of trained mechanics, and in response to this demand, there soon appeared among the slaves a class of trained mechanics, men skilled in the trades, such as blacksmithing and carpentry and the like. Not infrequently it happened that these slave mechanics and laborers had their own secret processes for doing the work assigned to them. In such cases, they carefully guarded their craft secrets, and handed them down to their children,

or whoever followed them in the trade. For example, Lumsden Lane, who was a slave in Newberne, N. C., in the early part of the last century, learned from his father a secret method of curing tobacco. Having succeeded in purchasing his time from his master, he and his father took up the manufacture of this tobacco, and Lane made enough in this way and other ways to purchase his own freedom, together with that of his wife and five children.

There are traditions of a number of inventions made by slaves at different times. Among these, I recall the "Hemp Brake," a machine by which the fiber is separated by beating from the hemp stalk. It is also reported that a slave of Jefferson Davis invented a propeller for vessels which was finally made use of in the Confederate Navy.

In the cities, like Baltimore, Md., and Charleston, S. C., many slave mechanics obtained practical freedom by being allowed to buy their own time. This was the case of Frederick Douglass, who worked as a ship-calker in the shipyard of Baltimore. Most of the slaves who bought their own time did so for the purpose of saving enough money to purchase their freedom. An indication of the number of slaves who purchased their own freedom in this way is given in a census of the colored people that was taken in Cincinnati in 1835. It appears from this census that of the sixty-nine heads of families, who had been former slaves, thirty-six had purchased their own freedom.

It will, perhaps, indicate the part which the Negro has had in the material development of the South if we compare the Negro with the Indian. At the time the Negro was first brought to America, the Indian and the white man had already made each other's acquaintance to some extent, but practically it may be said that the black man, the red man, and the white man met at the same time on the soil of America.

The difference between the Indian and the Negro is that while the red man fled from the white man's civilization, the black man was attracted by it. The red man clung to his old tribal life and customs, but the Negro adapted himself to his new conditions and eagerly sought to learn all that the white man could teach him. The result was that when emancipation came thousands of Negroes, by their industry and frugality, had purchased their own freedom and that of their families, while free Negroes, in spite of the limita-

tions that were imposed upon them, had accumulated property to the value, as near as I have been able to estimate, of something like twenty-five million dollars.

At the opening of the civil war, the slaves in the United States represented a capital of a billion and a half dollars. It is perhaps safe to say that the annual value of the productive labor of the slaves, over and above the cost of their keep, was something like twenty per cent of that amount. In other words, the Negro slaves of the United States, during the period just previous to the war, contributed annually to the wealth of the southern states something like \$30,000,000. When it is considered that slaves ordinarily rented in Virginia from one hundred to two hundred dollars a year, and that mechanics, who were buying their freedom, frequently paid a dollar a day and sometimes more for their own time, it seems probable that this is a conservative estimate.

How is it, on the contrary, with the Indian? Until within the past few years, the Indian, far from contributing to the wealth of this country has been an expense to the government of more than ten million dollars a year. From July, 1776, to June 30, 1890, the civil expenditures of the government on account of the Indians aggregated more than \$250,000,000, and if we take into account the sums it has cost the government in policing the different reservations, the whole will amount to considerably more than a billion dollars.

As a result of his long apprenticeship in slavery, the American Negro entered freedom with a capital represented in his own body and in his ability to work of something like a billion and half dollars. Having a practical monopoly of all the common and field labor and a very large hold upon the trades, the Negro laborer, so far as industrial competition is concerned, has found himself, since freedom, in an easier situation than other laborers in the world. As the freedman's wants were few and as the demand for labor was constant and increasing, there was no force inside or outside of him that drove him to the hard, severe, and intense labor, which the free laborers in other countries and other parts of this country perform.

Before emancipation, it was frequently said that as soon as the Negro became free he would stop work altogether, or that he would work so irregularly that his labor would be of no economic value,

and eventually he would be driven to the wall by competition with white laborers from the North. None of these predictions have been fulfilled. At the present time, in the coal mines of Alabama, where the Negro has come into direct competition with the imported white labor, Negroes mine about fifty per cent of the coal. When the iron mines were first opened in Alabama, all the miners were white. Negroes were employed simply as helpers. At the present time, about ninety per cent of the miners of iron ore are Negroes. Negro miners from the southern states have very largely invaded the mining regions of the middle western states. In Iowa, for instance, there is a Negro town called Buxton, which is almost wholly made up of Negro miners employed by the Consolidated Coal Company.

One reason the Negro did not immediately cease to work after freedom was that during slavery days, from his association with the white man, he had learned to feel a passionate desire for knowledge. During the first years of freedom, the whole Negro race became absorbed in the task of securing an education. To get an education, under the conditions then existing, involved a considerable amount of sacrifice on the part of teachers and pupils alike. Parents, who had themselves not been able to learn to read, willingly worked and saved in order that their children might have that opportunity.

With the growth of education there came a demand for trained teachers, and after that, for an educated ministry. Following this, there grew up a demand for a trained class of professional men,—lawyers, physicians and druggists. To build up within a few generations an educated professional class from men who had been for the most part slaves, required thrift, industry, and a sacrifice of the present for the future.

The effect of these new desires and ambitions has been to keep the masses of the Negro people at work. An indication of what the Negro, impelled by the motives I have described, has accomplished, are the figures showing the advance of the Negro land owner. Until the census figures for 1910 are available, what this advance has been during the past ten years cannot be definitely known for all the southern states. Estimates made up from a comparison of the former census figures with those obtained from the annual reports of the different states, confirmed by observation and

special studies made in different parts of the South, show that Negroes own at the present time something like 19,057,377 acres, or 30,000 square miles of land in the southern states alone. This is an area equal to that of Vermont, Massachusetts, Rhode Island, and Connecticut combined. Negroes own or are paying for more than 375,000 homes. In 1866, Negroes in the southern states owned about \$20,000,000 worth of property. Now they own close to \$550,000,000.

In Georgia, where the Comptroller's report shows by races the assessed value of the property of the state, Negroes owned in 1880 land and other taxable property to the amount of \$5,764,293. In 1908 the Negroes of Georgia were assessed on property valued at \$27,042,672, an increase in twenty-eight years of \$21,278,379, or 370 per cent. During this same period, the tax value of property held by whites has increased from \$245,660,358 to \$678,339,783, a gain of 175 per cent. In 1891 the Negroes of North Carolina listed \$8,018,446 worth of property for taxation. Seventeen years later, in 1908, the tax value of Negro property amounted to \$21,716,922, an increase of 171 per cent. In the meantime, the property listed for taxation by the white population had increased but eighty-nine per cent.

Forty years ago, there were almost no Negroes engaged in business of any kind. At the present time, there are at least 15,000 Negroes in the southern states engaged in operating dry goods and grocery stores, and various other kinds of business. There are at present probably more than two hundred drug stores owned and operated by colored men. In the little city of Jackson, Miss., for instance, which in 1900 had a population of 7,816, of which 4,447 were colored, there were, according to an investigation made in 1908, more than one hundred business enterprises carried on by Negroes. Of these, forty-four specially studied, did an annual business of \$383,000. Negroes in 1908 owned taxable property in the city of Jackson to the value of \$581,580. One-half of the Negro families of Jackson owned their own homes and two-thirds of the population lived in houses that were owned by colored people. Careful estimates, based upon reports of white bankers, indicated that Negroes had on deposit more than \$200,000 in the different banks of the city.

There are at the present time not less than eighty-five colored

insurance companies of various kinds doing business in the United States. Most of these are local organizations whose operations are confined to a single city and contiguous territory. A considerable number of these, however, are national in character and do business in all the southern states. In Mississippi, where these companies receive strict supervision, and an accurate record of the amount of their business is preserved, there were forty-two societies which had certificates in force to the amount of \$24,728,709. These societies, during the year 1907, collected from their members \$709,670, and paid over in losses \$522,757.96.

Up to 1900 when the first meeting of the National Negro Business League was held in Boston, there were but two banks in the United States. One of these was the True Reformers' Bank in Richmond, Va., founded in 1881, and the other was the Alabama Penny Savings and Loan Company, which was established in 1889. In all, there have been established something like fifty-five Negro banks in the United States. Some of them have failed. Others have gone out of business, so that, at the present time, there are forty-seven Negro banks doing business in the United States. In 1906, there was formed at Atlanta, in connection with the National Negro Business League, a National Negro Bankers' Association, in which about half the banks in the United States are represented. While the capital of these banks is, for the most part, small, amounting only in the cases of the oldest banks to \$100,000 each, the resources of Negro banks are rapidly increasing, as the habit of saving grows among the masses of the people.

These banks and the building and loan associations which preceded them in popularity among the Negro people, in so far as they have encouraged thrift, saving and home building among the masses of the people, have played an important part in the national development of the southern states. They have induced the masses of the colored people to settle down and acquire property, and the desire for property has made them more persistent and reliable in respect to their labor. Altogether, these influences and others are doing much to make the Negro in America a more contented and more useful man than he is, at the present time, in any other portion of the world.

One thing that has given impetus to the economic progress of the Negro in the South, is the fact that in many branches of industry,

the Negro has, or is getting, a monopoly of trade with Negroes, while in many other branches he has special advantages over the white man in dealing with the members of his own race. For example, Negro schools and Negro churches are, to a very large extent, in the hands of Negroes in the Southern States. The white people of the South have become convinced that, in most cases, both races are better off when Negroes have their own teachers and preachers, and that in church matters, and very largely in school matters, Negroes should manage their own affairs.

The effect of this segregation of the races in this and in other directions has frequently been to create for the Negro a special business opportunity. For example, one of the biggest business enterprises conducted by a colored man, is the National Baptist Publishing Company of Nashville, which publishes the greater portion of the church and Sunday-school literature used by the Negro Baptists in the United States. This concern, which does a business at the present time amounting to nearly \$200,000 a year was started in 1896, by an energetic Baptist preacher with almost no capital and very little experience. This business, started in this humble way, has increased from year to year until now it is one of the largest and best established denominational publishing houses in the South. Not only does its founder, Rev. R. H. Boyd, print a great part of the books and periodicals used by the more than a million and a half Negro Baptists in the United States, but recently he has taken up the manufacture of church furniture, and has established a thriving and increasing business in this line.

Another illustration of the way in which Negroes have succeeded in doing for their own race what other people have failed to do, is the success of the Negro Calendar Company of Louisville, Kentucky, and of the Negro Doll Company of Nashville, Tenn. As Negroes have become better educated and more self-reliant, and especially as they have begun to feel a pride in the progress of their own people, there has come a demand from Negro business men for calendars and other advertising matter, which set before the Negro people Negro rather than Anglo-Saxon models.

In the same way colored people have begun to see the wisdom of giving to their children dolls that have their own color and features, and which will have the effect of instilling in Negro girls and in Negro women a feeling of respect for their own race.

In all these directions, the colored people have been encouraged by the better class of white people, especially by Southern white women, who realize that if the Negro girl is to grow up pure and wholesome, she must be taught from the first to have a feeling of respect for her own kind.

I mention these two enterprises because they are typical of the directions along which Negro business enterprises have developed in the past and likely to increase in the future. Just as the Negro race has now its teachers and preachers, more and more every year, it is beginning to have its own physicians, its own dentists, its own pharmacists and drug stores. The Negro physician very naturally has a greater interest than the physician of any other race can have in the welfare of his own people.

Knowing them more intimately than any white man can, the Negro physician, as he grows more competent, is better able to advise and direct them in matters of their health. In doing this he performs a peculiar service, not only to the members of his own race, but to the community as a whole. In doing this he is making an opportunity for the Negro drug store. In other lines of business, the Negro has certain advantages which grow out of the fact that he meets his customers in their homes and in the churches, and that he knows the wants and the standing of the members of his own race better than any one else is able to do. For this reason, I am inclined to believe that, as the Negro gains confidence in himself and his people, Negro business enterprises are going to enlarge and expand more rapidly in the future than they have in the past.

In the industries and the trades, I do not believe that the Negro is going to have the same monopoly in the future that he has had in the past. Manufactures of various kinds are growing up and will continue to grow up in the South. New forms of labor are coming into existence and trades are multiplying. It is impossible that the Negro should furnish, in so large a proportion, in the future as he has in the past, labor for all these new and diversified industries. On the other hand, the Negro is rapidly becoming an employer of labor himself. Negroes are being employed in banks, in drug stores, insurance companies, as typewriters, reporters, clerks, agents, in all the various and multiplying kinds of business which modern life brings with it.

It is inevitable, therefore, that there should be a great redistribu-

tion of labor among the trades and professions in the South. The result is that the Negro will be engaged, in the future, in less numbers in certain trades, but will be engaged in a great many and different trades from those in which he has hitherto been employed.

I feel certain, too, that the southern people have determined, in the future as well as in the past, as far as the matter of labor is concerned, to keep the gate of opportunity wider open to the Negro than it is in any other part of the United States or of the world.

More and more, southern white people are beginning to realize that the South can only go forward and prosper when all the people are brought to the highest level of efficiency in their labor, and when all the people are successful and contented. More and more also, the southern people are beginning to realize, that in the matter of law and order, in the matter of health, and in the matter of upright moral living, the welfare of the whole community is more or less dependent upon that of its most humble citizen.

EFFECTS OF INDUSTRIALISM UPON POLITICAL AND SOCIAL IDEAS

BY HOLLAND THOMPSON,

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Much nonsense has been written about the New South. Every change in form has been hailed as a change in substance and we have been told many times that the Old South is dead, and that a new and entirely different South has risen from the ruins. These expressions have been generally the product of imagination and hope rather than of reality and fact. That acute, though often unfair, critic of southern life and institutions, Judge Tourgée, well said, in speaking of the Civil War, "It modified the form of society in the South but not its essential attributes." Never were truer words spoken. Reconstruction intensified prejudices previously existing and transformed them into fixed convictions.

There has been, and is still, a distinct line of separation between North and South which cannot be wiped out in one generation nor in two. During the Spanish war the sanguine again announced the final closing of the "bloody chasm." Those who were not carried away by their emotions smiled at the childish trustfulness that the acceptance of commissions by a few old Confederate leaders, and service under the flag by a few thousand young men would obliterate traits of character and a habit of mind that had been developing for centuries.

This does not mean that the people of the South are not loyal to the Union, but that they are provincial, and, like all provincials, they are prejudiced. The fact that other sections are also provincial is not the point at issue. The population has developed *in situ*. The proportion of foreign immigration is negligible—in North Carolina less than one-half of one per cent. There are few large cities. Every one knows his neighbors. In such communities public opinion is a power not to be ignored. Men hold steadfastly to opinions, which may be only prejudices, but they are willing to go to the stake for them, and their influence steadies the wavering. There are "accelerators" of public opinion to be sure, politicians

and editors whose stock in trade has been blowing the fires of sectionalism, but they could not continue to exist if they did not have followers.

The southerner often preserves his leading traits when transplanted and passes them on to his children. The most distinctly southern man I know, now sixty years old, has lived in New York since he was fourteen, though he spends a part of every year in his old home. On the other hand, the South has always swallowed up those who came to dwell within her borders. The children and grandchildren of New Englanders are more intense in feeling than the old stock. There is a fascination about the land which few can resist unless engaged in "missionary" work of one sort or another.

Speaking broadly the southerner has been since the days of reconstruction, a Democrat simply because he was white and not because he consciously accepted any body of economic or political theory, though perhaps his individualism felt that the best government was that which governed least. Because of this devotion to the word Democracy, no matter what the content, the southern states have had little influence in the national conventions of the party, since it has been assumed that their votes were safe regardless of platform or candidates. The local government has held the place of supreme importance, and because the policy of the Republican party threatened, or seemed to threaten, white supremacy, all else was insignificant. Almost invariably the northern man who cast his lot in the South has voted with his neighbors in local elections, even though claiming allegiance to another party in national affairs.

There has been, and yet exists, in the section as a whole a deep-rooted feeling of antagonism to other sections of the country, even though it may not always be articulate. No one who really knows the South can truthfully deny the fact, which is instinctively shown in matters apparently trivial, even by the more intelligent portion of a community. One reason is evident. Since the stability of the whole social structure has seemed to depend upon political solidarity, departure from the accepted canons could not be judged as nothing more than an intellectual difference of opinion, but was necessarily regarded as black treason to one's own race. To what extent generations to come may justify this instinctive intolerance, only the future can determine. We are too near and too much

prejudiced to give a judgment worth recording. The fact remains and it is to be explained, not excused nor denounced.

Intolerance cannot be confined to one compartment of the human nor one division of its interests. Where the right of man to give expression to free thought is denied in one thing almost certainly will it be refused in others. Whatever of Puritanism in thought and life yet remains in this country exists in the South, and even where strictness of life is lacking, orthodoxy in belief has persisted. The preacher has been a power in the South as well as in New England, and generally his voice has not been raised in advocacy of a broader life, but for one more intense. In all these matters pressure, denunciation or patronage from without has had no effect other than to intensify convictions previously existing.

For twenty years, however, a silent force, almost unnoticed, has been working, and only recently have some of its real effects been discovered, if indeed they may be said to have been discovered at all. Some of the southern states are rapidly becoming industrial communities. South Carolina is now the second state in the manufacture of cotton, North Carolina, third, and Georgia is not far behind. The mills of the cotton-growing states consume as many bales as those in all other states. Lumbering and mining grow increasingly important. Another Pittsburg is growing up in Alabama. The world buys tobacco grown and manufactured in the South, and the furniture industry grows with wonderful rapidity. The despised cotton seed furnishes oil, stock food, and fertilizer worth more than one hundred million dollars a year. In fact in almost every village in some sections of the South are one or more manufacturing enterprises which seek more than a local market for their products.

One town, with which I am familiar, has grown in population from 2,300 to more than 6,000 since 1890, but the annual output of manufactured goods has grown from less than \$250,000 to more than \$3,000,000. Only an insignificant part of the capital invested has come from without, and only a few skilled employees have been imported. The capital and the labor both were secured from the town itself and the surrounding country.

Money is more plentiful. Dozens of men receive salaries greater than the highest paid twenty years ago, and though the cost of living has increased greatly, particularly since 1900, salaries

have, on the whole, increased faster. Everywhere, at least in the Atlantic states, are towns, the growth of which has been similar. In such towns the old bottles cannot contain the new wine. The successful manager of a great enterprise cannot be ignored, politically or socially, and a new type is developing.

This "southern Yankee" is shrewd, cold, far-sighted, and is able to hold his own in any contest. He cannot be accused of exhibiting "southern sentimentalism." Sometimes he is a member of a family ruined by the war, who has been embittered by his struggle for independence. Instead of political ambition, he has a desire for financial power. Sometimes he has come up from generations of poverty. He feels himself a force and the sensation is pleasant. Since money has brought him this increased consideration, he is willing to bend all his energies to getting more money, and millionaires are no longer unknown. This type is by no means universal nor even common. Most employers are men of the older type, charged with greater responsibilities, and the freedom of southern industry from labor disputes has been due in a great measure to the personal interest of the employer in his operatives; but the newer type is increasing in number yearly.

Social lines are shifting. Often the ambitious families of the successful business man, newly arrived, break through any existing social barriers, and even attempt to assume leadership. In some sections there are signs of a new, would-be aristocracy, such as exists elsewhere, based upon wealth and business success rather than upon breeding, or public service, contrary to the traditions of the old South which never accorded social prominence to wealth alone.

The ideal of success is changing. Years ago the restless young college man, conscious of his powers and desirous of exercising them, turned to law and politics as a mode of expression. Now every year a larger proportion of high-school and college graduates turn to business and manufacturing. Engineering and scientific courses grow more popular, and hundreds of young men of professional ancestry pass through the grime of machine shops.

As said above, the operatives and employees of the manufacturing establishments have been drawn chiefly from the farms, or are only one generation removed. Some owned their land, others were renters, few were hired laborers. In the country the families

were isolated, and sometimes no outsider other than a chance passer-by was seen for days. Now they are crowded together in factory villages where they may talk from house to house. Yesterday they produced raw material for others to fashion; to-day they fashion it themselves. They spend the greater part of their waking time tending complicated machinery within walls instead of working with a few simple tools in the open air. They receive their pay in wages instead of in the products of the soil. In the country, usually it made no particular difference whether a task was done one day or the next, and a holiday could be taken without apparent loss. In the mill or factory, loss of wages and the overseer's displeasure follow any departure from absolute regularity.

Such a radical change in manner of life has affected them, socially, religiously and politically. The dormant social instinct first develops and they become gregarious. Solitude, once no hardship, becomes unendurable. Though hundreds of families come to the factories with the avowed intention of saving money to pay a mortgage, or to buy a farm, in rare cases does a family return to the country. Occasionally when work is slack a family may go back, but seldom remains permanently. It is simply another phase of that feeling which is building the city at the expense of the rural districts in every part of the country.

In the country practically every family was connected with some religious organization. It is the universal testimony of students of social conditions that the church is not holding its own among the industrial population. In the country the monthly or semi-monthly church services afforded the chief opportunity for social intercourse. In the town these services are no longer so important from a social standpoint, and more and more Sunday is spent as a day of rest. This does not mean that a "continental Sunday" or anything approaching it has developed in the South, but a gradual loss of interest in religious observances by the industrial population as a whole is undoubted.

There are signs of a stirring class-consciousness. The factory population in the sections where manufacturing has been longest established, at least, is beginning to think of itself as a class with distinct interests, and can no longer be depended upon to vote regularly. So far socialism has made small appeal, because they are too close to the land, and a land-owning population is not

socialistic. A class not yet conscious of itself affords sterile ground for labor organizations, and only the most intelligent and most skilled trades are organized. In many cases the employers have been able to break up the newer organizations, almost without trouble, as the organizations of textile workers in North Carolina were broken in 1900 and 1901. A population so strongly individual and so conservative is not yet ready to sink personal independence in an organization, the benefits of which are not fully comprehended.

That strong unions will be organized finally no one can doubt. When the inevitable contest comes, the operatives will suffer more at first from the loss of the personal kindness of the employers than they gain in wages. The unions will be powerful. The men are physically fearless, they are native to the soil, are capable of sacrifice for an idea, and then there is always the land to which they may return if beaten.

All through the manufacturing districts of the South there is political unrest, though so far little of it has been translated into Republican votes. In some sections, however, the business interests are beginning to vote more independently, though perhaps maintaining the appearance of party regularity. The "vest-pocket" vote is growing. At the last election North Carolina chose three Republican congressmen. The mountain district has been debatable for years. Across the Blue Ridge Mountains few slaves were owned, and enthusiasm for the Confederacy was not strong. It has been jocularly said that in one county neither a Negro nor a Democrat was permitted to live. While the statement is exaggerated the white Republican majority is overwhelming and the number of Negroes is negligible. Another district includes both industrial and mountain counties, and the former Democratic incumbent could not maintain his hold upon the combination. In the other district, a successful business man belonging to one of the foremost families of the state was elected to succeed the present Democratic governor. While factional fights within the dominant party influenced the result to some extent, the "business vote" was the deciding element.

More significant perhaps is the fact that in Louisiana it is apparently possible to reconcile Democratic regularity with consistent votes for every schedule of the tariff bill framed by the Republican party. In North Carolina also all except one of the Democratic members of Congress voted against free lumber though

demand in the national platform, and it has not been charged that they expected better committee assignments in return. While some newspapers, and some sticklers for regularity have attacked their course, they seem to be confident of the approval of their constituents. It is reported that the bolting members from Georgia and Florida likewise expect to be indorsed.

The influence of the new spirit may be seen within the dominant party. A Confederate record no longer outweighs all other considerations. Until a few years ago old soldiers as a matter of course took the more important offices. Since a large proportion of the best blood and brain was in the service of the Confederacy, such a state of affairs was natural for a considerable period after the close of the struggle. As young men of promise grew up, however, many felt it an injustice that their claim of superior fitness was ignored because of an opponent's military record though this impatience was not always loudly proclaimed. For four years, possibly more, not a single member of the House of Representatives from North Carolina was a soldier. The younger men have held the governorship and the senatorships for a much longer time though in every convention and legislature the claims of veterans have been advocated. These men have not been defeated because they were soldiers, but in spite of the fact. It means simply that a military record no longer outweighs all other considerations. To a greater or less degree a similar state of affairs exists in other southern states.

Industrialism cannot be credited with bringing about this change, though it has had its influence. The business interests are not yet openly in politics, though the railroads are charged with attempting to influence conventions in some states. The rise of the "wool-hat" man has had more influence than any other single force. However, the discussion of the increasing influence of the small farmer and his descendants, once somewhat inarticulate, does not properly come within the province of this paper, interesting as the subject is. It is enough to say that whatever control of political affairs was exercised by a few prominent families in various states in the past has been lost.

As regards certain phases of the Negro question, opinion, conviction—call it what you will—is fixed, and an absolute making over of all southern society would be required before any considerable

change would appear. In other phases the Negro's position grows harder on the whole. The great industrial expansion has in many districts created a distinct shortage of labor and wages have risen greatly. This rise in wages has, generally speaking, not been followed by increased efficiency, but rather the reverse. Too many Negroes are content with the minimum of subsistence. If three days' work at the increased wages furnish this for a week, the laborer has often idled the other three. In some sections the servant question is becoming acute. Until a few years ago, servants, such as they were, could be easily obtained at low wages. Though wages have doubled within ten years it is the universal testimony that service rendered is not more satisfactory, and hotels and boarding houses are substituting white help where practicable.

More and more, efficiency counts with the employer, and by the efficiency test the Negro fails. The old slave-holding class had a real affection for the Negro, and overlooked or excused his shortcomings. Their children are less tolerant and the descendants of the non-slaveholders, who in many cases control employment, are inclined to hold the Negroes to still stricter account in every way. These have no inherited sense of responsibility for the welfare of the black to soften their judgments. The individual Negroes who order their lives in accordance with the accepted standards of good citizenship are increasingly respected by the better element among the whites, but the lazy and the thriftless are in more danger of feeling the weight of the criminal law.

With rare exceptions the right of the Negro to work at any sort of manual or mechanical labor has not been questioned. Negro carpenters, masons, plumbers, blacksmiths, etc., work beside whites in almost every southern town. On the farms the white and black work together as a matter of course. The employment of Negroes in establishments where they would work beside white women is an entirely different matter. With the industrial development, and to some extent, as a result of it, instances of opposition to the employment of Negroes in the trades have recently appeared. In some cases the collision has been precipitated by labor organizers from the North where Negroes are not admitted to many unions. The final result will depend, to a large extent, upon the development of efficiency in the race. The employer will protect the Negro's right to work if he deserves it. Otherwise he will be confined to personal and domestic service as in other sections of the country.

Only a few interesting features of an interesting section have been touched in this brief paper. No discussion of the South, as a whole, can be universally true, since some states or parts of states have not felt the development, while on the other hand additional space might be devoted to other divisions. As a whole the South is being profoundly influenced by the transfer of a rural population to factory villages. The next generation will exhibit more striking and more far-reaching changes since manufacturing communities tend toward a type. What no amount of coercion could accomplish is being done by the silent working of economic forces. Commercialism is doing what bayonets could not do.

LABOR SUPPLY AND LABOR PROBLEMS

BY ENOCH MARVIN BANKS,

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If, as is generally agreed, soil and climate exerted a determining influence in the growth and spread of slavery in the South, it is perhaps safe to assume that these two elements of the physical environment still sustain a vitally important relation to the main body of labor problems peculiar to the section. Indeed, it requires no very extensive acquaintance with the physiography of this section for one to see that the primary and predominant energy of its population naturally turns to the extractive industries.

The soil and climate of the vast coastal plain, which extends from the Potomac to the Rio Grande and for present purposes includes in its sweep the Piedmont plain and the lower Mississippi Valley, proclaim agriculture the leading extractive industry of the South. In order to support the proposition just made, and in order to give a degree of definiteness to the point involved it may be stated that according to the census of 1900 three-fifths of those gainfully employed in the South are engaged in agricultural pursuits, while in the North Atlantic states only one-eighth of the people gainfully employed are to be found in agricultural lines of activity. Moreover, the rich deposits of coal and iron in certain Appalachian regions of the South invite exploitation and are making mining another extractive industry, which, although of relatively small importance now, will doubtless be of increasing significance to the future student of southern labor problems. The native forests of the South have given rise to a series of extractive pursuits, but these pursuits, unlike that of mining, are of decreasing importance in their relation to the number of people gainfully employed.

While the physical features of the section thus tend to direct the primary energies of the people into extractive channels, there are additional considerations in the case which suggest the naturalness of an increasing superinduction of secondary industries upon those of the primary character. Why should not the vast stores of

potential power available in this section, whether of water, or of steam, or derivately of electricity, be utilized in converting the raw products of the extractive industries into finished products ready for the consumers' market? Of course I am aware that such a change is gradually taking place, and, indeed, so striking is this movement that it has come to be regarded by some as perhaps the essential feature of the new South. Whether or not the change just referred to is the essential feature of the new South is a matter which it is not to our purpose now and *here* to discuss. Certainly, however, the question asked and the point involved in the change may serve the useful purpose of leading us up to an elevation from which, with a becoming perspective, we may get a glimpse of some of the essential features of the labor problems of the new South.

Without in the least disputing the fact that a notable beginning has been made in the way of introducing manufactures in the South, I venture to suggest that the immediate handicap to and limitation upon the expansion of such enterprises in this section lies in a dearth of population. A relatively small population located upon a reasonably productive soil rarely makes the economic mistake of developing an extensive system of manufactures. To be sure, the degree of density which a population having commercial intercourse with other regions must attain before it can profitably engage on an extensive scale in manufacturing enterprises depends upon a variety of circumstances and is therefore a matter which cannot be easily predetermined. In what has been said, however, only the immediately perceptible and superficial side of the question has been stated. It is not enough to say that the density of population in the South, considered in relation to the agricultural resources, has been insufficient to warrant a large development of manufactures. When the splendid opportunities which nature seems to offer not only for the development of the primary pursuits but also for the growth of secondary lines of activity are surveyed, the question assumes the form of asking not so much, indeed, why the people who are here have failed to develop manufactures to a greater extent, but rather why there are not more people here. To be specific, why has Rhode Island 407 people per square mile and South Carolina only 44; why has Massachusetts 348 and North Carolina only 39; why has New York 152 and Georgia only 37;

why has Pennsylvania 140 and Alabama only 35; why has New Jersey 250 and Florida only 10? It is very much easier to ask the question than to answer it. Indeed, this paper will not attempt to make an adequate answer to the query for the very good reason that an adequate and exhaustive discussion of the subject would throw into relief all that is fundamental in relation to the economic life of the South and would require an equipment in data and in analytic powers far greater than the writer possesses.

A few suggestions however will be ventured with reference to the comparatively meagre apportionment of population to the South, because the question has such a fundamental relation to the labor supply and to the labor problems of the section. An element in the physical environment referred to in the opening sentence of this paper no doubt has an immediate as well as an indirect relation to the problem in hand. The climate of this section and certain conditions of the physical environment which often accompany a warm climate do not exert a highly invigorating effect upon the people, and consequently highly creative and well sustained mental and physical exertion is not a characteristic mark of those who live in the South.

A moving population normally follows a direction marked out by the prospects of increased well-being. The lack of the evidences of general prosperity particularly in the rural South is not calculated to stimulate a large current of migration in this direction. When the great mass of those who are here rise to the position of positive economic accomplishment there will be strong inducement for others to come and share in exploiting the resources of the South. Moreover, the climate has an important relation to the present peculiar composition of the southern population. The Negro is here because the climate and soil and the white man's cupidity have placed him here. To what extent his presence in this section has served and even now serves to deflect the course of white migration in this country from a southerly direction it is not easy to estimate. Nor is it any easier to determine the measure in which he possibly supplies what might otherwise be an unoccupied gap in our population.

Although we have thus made prominent the fact that from certain points of view there is a scarcity of labor in the South, it is perhaps already apparent that the fundamental labor problem is not

concerned with methods of directly inducing immigration. To be sure that may be an incidental problem of some importance, but the effective stimulation to southern immigration is to come indirectly and as a result of the solution of the more urgent problems in the case. Moreover, in view of what has already been said, it is hardly necessary to add that the fundamentally important labor problem in the South is not concerned with curtailing the labor of children in factories,—though to be sure a noble band of reformers are doing valiant service in that segment of the field. In this connection it is well to bear in mind that of the total number of those gainfully employed in the South less than two per cent are employed in cotton manufacturing establishments, while hardly more than ten per cent are engaged in all the manufacturing and mechanical pursuits! However, when a reformer is working for wholesome results and is meeting with success in his endeavor we can pardon the fault of losing all sense of perspective in his zealous advocacy of the particular cause he has espoused. On the other hand, the zeal of such a reformer should not mislead the scientific student when surveying the field as a whole. It is here desired to reiterate and emphasize the fact that southern labor problems are not in a relatively large and conspicuous sense problems that relate to laborers employed in manufacturing enterprises. Such problems there are and they are of growing importance, but it will be far in the future before their significance will be comparable to the significance of the problems affecting those engaged in the extractive industries. Because strikes and lockouts and such other dramatic manifestations of economic ambition and power are of rare occurrence upon our farms it must not be supposed that all is well with them and that they present no labor problems of profound and far-reaching importance.

Granting, therefore, that southern labor problems relate mainly, though not exclusively, to agricultural laborers, it is now proposed, in indicating the essential nature of those problems, to present some of the ways in which their solution may possibly be reached. If these urgent problems are solved, there will come an increasing stream of immigration into the South, all her natural resources will be developed in a normal way, and the section will rise to a position of equal importance in the national life.

Labor is human effort put forth in behalf of human wants. If either the wants be defective or the efforts be deficient the pal-

pable go-between which we call wealth and which is so essential to human well-being is usually slight in amount. The deficiencies just suggested characterize and epitomize the southern agricultural labor situation. That description shows that the problems in the case are both psychological and physiological in character. Wants are mainly psychical affairs though of course they have a physiological basis, and the effort put forth toward their gratification is both physiological and psychological in character. Now if there be something lurking in the environment which operates so adversely upon the human system that it fails to respond adequately to the favorable opportunities for economic improvement which the environment otherwise offers, the line of approach to the secret of the difficulty is indicated. Any one familiar with conditions in southern agriculture, particularly, though by no means exclusively, with conditions in the great belt in which "cropping" arrangements prevail, knows that inefficiency characterizes the mass of laborers thus employed, and he is aware moreover that the fact of inefficiency does not follow a racial line.

It is usual to suppose that in the case of the Negro inefficiency with its psychological and physiological causes is a racial characteristic which it will require centuries to correct, if indeed there are any grounds for anticipating improvement. It is perhaps true that the Negro is racially defective in his conception of economic well-being and one may well doubt what his fate might be if he were placed in an environment that demanded considerable achievement as the price of existence. On the other hand, no one knows as yet to what extent his defective psychology may be improved when wise methods of improvement are brought to bear upon him. Nor does any one know as yet to what extent he may be physiologically weakened by the enervating influences that affect the white man in the same region.

As every one conversant with current discussions is aware much light is being thrown upon the probable causes of the inefficiency of labor in the South. The interesting phase of the whole discussion is that it is not in the least degree pessimistic in tone. It does not in stupidity close its eyes to the patent fact that labor in the South is grossly inefficient as compared with labor in other sections, but frankly recognizing the fact, it is seeking for the causes of that inefficiency, and the encouraging conclusion is being reached that

the causes are in many instances removable. If certain endemic diseases arising mainly, as it seems, from the mosquito and the hook-worm can be eradicated there is abundant reason to believe the efficiency of labor in the South may be wonderfully increased.

The great desideratum is a sane campaign against the enemies of efficiency, and the campaign should be based upon scientific knowledge and not upon sentiment. A laudable step in the right direction is the recent gift of a million dollars by a citizen of the North to be used in formulating plans for the eradication of the hook-worm. As more and more definite knowledge on such subjects is gained through the investigations of experts, this knowledge should be conveyed through various channels to the masses of the people. The physicians of the South may in relation to these problems perform an important public service. The universities of the South in their appropriate scientific departments should make constructive investigations and discoveries in relation to these problems which bear so directly upon the possibility of an advancing civilization in this section. The newspapers directly, and the lower schools indirectly, may act as effective agents in spreading and popularizing the uplifting information. The churches, forgetting their dogmas, may also come in for a fair share in such work of social uplift. Finally the state and local governments should take a large part both directly and indirectly in this campaign against the endemic diseases which undermine energy and ambition.

While we are thus brought to the conclusion that the most fundamental economic problem in the South is physiological in its primary aspects it must not be supposed that it is an exclusively physiological problem. There are two other methods of dealing with the problem, both of which, together with the physiological method, may be simultaneously used in directing an attack upon inefficiency. The physiological method seeks to remove any diseases that may prey upon the body, sapping its strength and vigor and preventing the development of normal human capacities. The other methods seek to give what may be called artificial stimulation and direction to the powers that latently exist. This stimulation and direction must come through systematic plans of education which have for their object the raising of the standard of living and the giving of specific training for the career to be followed.

The state through the agency of its school system should take

the leading part in furnishing agricultural and industrial training, and as a counterpart to such training instruction should be given in the elements of prudence and wise choice for the purpose of raising the standard of living. In seeking to elevate the standard of living it is important to bear in mind that wants should never be educated out of harmony with the possibilities of gratification. To be sure, wants should always in some degree outrun actual attainments, otherwise improvement ceases. On the other hand, if they run too far ahead of the capacity for furnishing a reasonable measure of gratification the result is chaos and not progress. There should be an immense expansion of agricultural and industrial schools in the South planned for the purpose of increasing the efficiency of labor and of gradually raising the standard of living. Booker Washington's statesmanship lies in his clear perception of the immediate work in lines of economic training that needs to be done in order that his race may make orderly progress. Washington's idea is the correct idea not only with reference to the needs of his own race at the present time but also with reference to the needs of a majority of the whole people of the South.

In this paper no allusion has been made to the possibility that a labor problem may lurk in the fact that two dissimilar races compete with each other for employment. If a program somewhat similar to the one outlined in this paper is followed for a few decades, I am aware that there may arise a labor problem primarily racial in its character. However the gravity of that possibility in no measure deters me from advocating what appears to be the wise policy from the standpoint of present needs. When the other problem comes, for indeed it is not now urgent, let us hope we may be wiser than we are at the present time, and that a solution of the problem may be reached upon the basis of a higher ethical standard than the world has ever yet brought to bear upon any large social problem.

THE NEED FOR AGRICULTURAL EDUCATION

BY DAVID Y. THOMAS, PH.D.,
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While teaching in the University of Florida my attention was called to the need of certain lines of agricultural training in a very forcible manner. It was there that I left the boarding house for a home and began to learn something of the problems which confront the housekeeper. To my astonishment I found, on looking over the grocer's bill, that we were paying forty cents a pound for butter. Straightway there was an investigation. When called upon, the grocer brought out a neat little brick of butter and said, "Yes, that is as cheap as we can sell Wisconsin butter." "Wisconsin butter!" I gasped. "You do not mean to tell me that you are selling butter from Wisconsin. Do not Florida people make butter?" By way of answer he brought out a pan of greasy stuff which he sold to some people under the name of butter at twenty cents.

Then I began to reflect a little. There is a University of Wisconsin. Connected with this is an experiment station and an agricultural department. Certain men up there have interested themselves in securing a better breed of cattle and improving dairy methods. A professor had actually invented a separator and a milk tester. Results:

	Butter.	Cheese (lbs.).
1880	33,500,000	19,500,000
1890	66,300,000	54,000,000
1900	80,000,000	60,000,000
1905	120,000,000	110,000,000

In the last five years the production of farm butter increased thirty-eight per cent. By this time the total production of butter and cheese must be approaching 500,000,000 pounds. In one year Johanna, just a cow, produced 13,186.2 pounds of milk which was turned into 557.62 pounds of butter worth \$119.49, and the skim-milk left was worth \$21.10. Deduct from this \$45.28 for her keep and you have a net profit of \$91.31. That was pretty good, but the

next year she leaped to nearly 27,500 pounds of milk, nearly eighteen times her own weight. Then there was Pedro's Pandora which produced 13.29 pounds of butter fat in seven days. Meantime shippers continue to buy up miserable scrubs from the Florida and Georgia crackers at \$10 and \$15 per head and ship them off to Cuba, while tourists and native dwellers of the towns buy Wisconsin butter at forty cents. If the crackers only knew!

Take the matter of corn. "Hog and hominy" is a distinctly southern dish, yet here are some comparative statistics of corn production: North Carolina, 16.5 bushels per acre; Pennsylvania, 32.5; South Carolina, 15.1; Michigan, 30.1; Georgia, 13.0; Wisconsin, 32.0; Alabama, 15.5; Minnesota, 27; Mississippi, 17.0; Kansas, 22.1; Louisiana, 17.5; North Dakota, 20; Texas, 21; South Dakota, 25.5; Oklahoma, 24.4; Colorado, 23.5; Arkansas, 17.2; New Mexico, 29. Most of the states with the better yield probably are better adapted to corn, but the yield in the South can be greatly improved. Contrast with the above some experiment station and demonstration farm results. In 1908 the Georgia Experiment Station made tests with thirteen varieties of corn and secured an average yield of 30.5 bushels. The highest yield was of the Marlboro Prolific, 39.59 bushels. A demonstration farm in Mississippi sets 35 bushels over against the average of 17, one in Alabama 37.5 over against the average of 15.5, and one in Virginia 43.75 over against the average of 25, and the experiment station in the same state ran the yield up to 75. In Illinois the experiment station has produced 100 bushels per acre, and a boy in Arkansas has done the same, winning the prize in the boys' contest.

There is no mystery about it—simply intelligent selection and cultivation and economic fertilization. Instead of sixty pounds of fertilizer the Georgia farmer will have to apply from 200 to 350. At the experiment station they applied 353.9 pounds. The director of the station, the Hon. Martin V. Calvin, says: "It is not necessary to issue a propaganda in favor of buying fertilizer in any cotton state. . . . The necessity is to educate, to induce, to persuade, the great mass of fertilizer purchasers to use material with an open hand, intelligently."

For years the southern farmers have been told to plant less cotton and more corn. It is unnecessary. Nine cotton states now produce 561,103,000 bushels to 402,628,000 by nine northern and

western states. But to do this the South took 30,767,000 acres, while the other nine took only 15,564,000. More fertilizer will help toward the 800,000,000 mark.

Testing seed is important. The work of Professor Holden in adding millions to the wealth of Iowa through seed selection is a matter of common fame. Out in Texas tests were made from seeds from the fields of several different farmers. The best yielded twelve bushels more per acre than the average of the others. Of the thirteen varieties tested in Georgia the Marlboro Prolific produced 39.59 bushels, while Riley's Improved produced only 24.78. Many a farmer's son knows all about the Duke of Marlborough and the battle of Blenheim—the daughters know about the present duchess—but never heard of Marlboro's Prolific. Many never heard of either. If they only knew.

Tobacco is a distinctively southern crop. In Virginia they raise 675 pounds to the acre; in North Carolina, 580; in Florida, 875; in Kentucky, the greatest tobacco state of all, 870. The largest of the averages, that of Florida, is exactly half the average in Massachusetts, the state of abandoned farms. In New Hampshire they raise 1,785; in Pennsylvania, 1,375.

A great deal of the waste and deterioration in tobacco takes place after the crop is in the shed, due to unscientific curing. Experiments with steam curing showed practically no loss. Here, as well as in corn, the matter of seed is important. Two-thirds of the tobacco now grown in Wisconsin came from seed which resulted from experiments carried on at the Wisconsin Experiment Station. The average planter does not know that the leaves should not be stripped from the seed stalks when the rest of his tobacco is cut. Neither is he expert in selecting hardy plants from his plant bed. But he could increase the yield and quality, if he only knew.

Not so very long ago rice was supposed to be peculiar to the swamp lands of the Gulf Coast and the South Atlantic. In 1903 the Arkansas Experiment Station began a series of experiments on rice. In 1908 Arkansas had about 28,000 acres of rice with an average yield of forty bushels. It is believed that the yield for 1909 will exceed 1,750,000 bushels, and the cultivation has extended to Missouri. The price received varies from \$0.80 to \$1.00 per bushel. The experiment station has made one acre yield 100 bushels. In Georgia they are experimenting now with upland rice. Some day

rice may reduce the price of flour, if we only knew enough about its cultivation.

In 1894 my career as a school teacher began in the black belt of Alabama where cotton is king. At that time this ruler was grinding down his subjects with a heel shod with four and five cent cotton. I longed to get away from the cotton belt where I would never again see a stalk of cotton nor hear the despairing wail of the planters. Now we have changed all that and cotton is a beneficent ruler once more—only his subjects are not yet sufficiently enlightened in the matter of selection, fertilization and cultivation, to say nothing of care and marketing.

On some of the 40,000 demonstration farms scattered from Virginia to Texas a number of tests have been made on cotton, notably in Alabama, Georgia, and Mississippi. A plant cultivated the old way grew fourteen inches high in a certain time and weighed three ounces. They call this bumble-bee cotton because a bee can stand on the ground and sip honey from the blossom. By new methods of cultivation another stalk was raised to twenty-two inches in the same time and it weighed sixteen ounces. Down in Alabama where the planter was averaging 169 pounds of lint cotton to the acre the demonstration farm got 428. In Mississippi the planter average of 228 pounds was raised to 445 by demonstration methods. Mr. Daniel J. Sully knows a few things about cotton besides how to corner it. In 1906 when he visited North Carolina he was invited to inspect a field near Raleigh growing two and a half bales to the acre where previously only one-half bale had been produced. He could not believe it until he went out and saw for himself. Scientific knowledge applied to farming did it. If the farmers only knew!

In the summer of 1907 while passing through Van Buren, Ark., I counted, near sundown, twenty-six farm wagons standing in line, waiting for a chance to unload their burdens of Elberta peaches ready for shipment to northern and eastern markets. Some of the peaches were beauties, some were not. The difference in most cases probably could be accounted for by the difference in the scientific knowledge of the producers. One man was reputed to have sold his crop on the trees at \$125 per acre. That same fall the banks of Fayetteville, Ark., did not curtail payments—that was the panic year—until forced to it by their correspondents. The explanation

is that their coffers had just been filled by a bumper apple crop. If one passes the canning factories of Fayetteville now, he will find that they are using many faulty apples. In the window of a certain store a few days ago some fine apples were on display, underneath which was this legend: "Fifteen acres sprayed and not a wormy apple in the lot." There is a great deal in the proper spraying and fertilization of fruit, if the fruit growers only knew. But how shall they know except they hear, and how shall they hear except they be taught, and how shall they be taught unless schools be provided.

There are a few agricultural colleges, but they hardly supply the demand for trained investigators and teachers. As for the farmers, they touch these only remotely, except through short courses and extension work and this is only in its infancy. The normal schools of Missouri were first in the field in training teachers of agriculture and probably are now the best in the country for that specific work. The normal schools of Alabama, Arkansas, Georgia and South Carolina are taking up the same work. But they reach the farmer only indirectly. Several of the states, in an effort to reach the farmer directly, have gone a step farther and provided district agricultural high schools. Such are to be found in Georgia, one for every congressional district, and Alabama, Louisiana and Arkansas are preparing to start schools of like character. More than this, the states of Alabama, Arkansas, Georgia, Louisiana, Mississippi, South Carolina, Tennessee, and Texas have laws requiring the teaching of agriculture in the rural schools. Besides this the agricultural societies have done a great deal to promote agricultural education. The Agricultural College of Georgia claims to have started the first cotton school ever held in January, 1908. The Farmer's Union of Arkansas anticipated them by one held at Conway in 1907. Most important of all is that the unions are now more interested in education than in politics.

The high schools mentioned above may accomplish much, but the way to reach all the farmers is through the rural schools. Some farmers may still scoff at book farming, but the boys' contests will open their eyes. If not, those boys will one day be farmers and they will not forget. It is not within the province of this paper to map out a definite course of study for the rural schools, showing just when, where, and how agriculture may be taught.

The possibility of such a thing is no longer debatable. The purpose of this paper is to emphasize its advisability.

The Negro has been told that he needs industrial education. Some have accepted this advice and are securing it at Hampton and Tuskegee. When they secure this they cease to hew wood and draw water for others. Recently a southern white man wanted a certain kind of plastering done, but searched in vain for some one to do it. At last he saw two Hampton graduates doing exactly what he wanted. He employed them at \$4.00 per day and they hired a white man to carry mortar at \$1.00. The Negro farmer who has been to Hampton or Tuskegee ceases to rent or mortgage.

Though democratic in name and to some extent in form, the American nation has never become thoroughly democratic in spirit. We have often been told that America is another name for opportunity. Now opportunity means a chance to rise above one's fellows, and especially to escape manual labor, and that is what nine-tenths of the Americans want. Education has been shaped to promote this end. Not every man can be at the top, if there must be a top. Every man's living ultimately comes out of the ground. With the passage of years and the increase of population the problems of extracting that living become more and more acute. What will become of the man, white or black, who has neither industrial nor cultural education?

Education must be democratized and made to subserve the economic interest of man. This will not kill the cultural school, but will foster it. The man who wants to be a lawyer or a doctor or a teacher or a journalist or a novelist will have a hundred opportunities where he now has one.

Between 1862 and 1868 the United States collected \$68,000,000 in the way of a tax on cotton. The legality of this tax was contested and affirmed only by an evenly divided court. Its injustice is now generally conceded. This tax should be returned to the southern states for the benefit of rural schools with the stipulation that agriculture should be taught.

CHILD LABOR IN THE SOUTH

BY A. J. McKELWAY,

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The South is a part of the nation. Its industrial development has not been unlike that of America as a whole, except that it had a new beginning thirty years ago. The child labor system is an abnormal and, let us hope, temporary phase of industrialism, whose origin and history have been much alike in the South and in the older manufacturing states of both America and Europe. In general, wherever an industry admits of the labor of children with profit, there children are employed until their exploitation is forbidden by law. There are large fields of manufacturing and mechanical industry where the labor of children is unprofitable, if not impossible. In the newer commonwealths, both of the west and southwest, child labor does not exist to an appreciable extent, and it is impossible, on account of the high wage scale for the adult, to establish those industries that do employ children on a large scale. With the growth of cities, and the poverty inseparable from over-crowding of the population, the employment of children in the street trades becomes a serious evil, whether in the South or elsewhere.

But there are certain industries in which the application of steam or electrical power to machinery minimizes the necessity for adult brawn, while the very perfection of the machinery renders less needful the skill and the intelligence of the adult hand and brain. In these industries there always have been found multitudes of children employed, until there was restriction or prohibition by law. In the older manufacturing states the evil has long been recognized, and its control effected or attempted, according to the ease or difficulty with which public opinion translates itself into remedial legislation. In the newer manufacturing states the evil grows apace, until it becomes conspicuous enough to arouse public sentiment in behalf of the little victims of the system, and the slow process begins of restricting their employment by legislation and the slower process of enforcing the laws.

Now it happens that the southern states are new manufacturing states. It happens also that the most conspicuous manufacturing industry in the South, the manufacture of cotton, is one of the industries, all whose traditions, both in England and New England, pointed to the wholesale employment of children. The extraordinary growth of cotton manufacturing in the South, from 1,819,291 spindles in 1890 to 6,267,163 in 1900 and to 11,250,000 spindles in 1910, according to a recent estimate of Colonel Hester, of the New Orleans Stock Exchange, has brought about a pressing demand for labor, in a section of the country rather thinly populated, a demand that has thus far only been supplied with native white labor, with no appreciable aid from immigration. The low price of raw cotton, in the decade ending with 1900, and the consequent unprofitableness of cotton farming, resulted in a large emigration to the mill villages, from the tenant farms and from the mountain regions, where it was easy for the cotton mill agents to persuade the people of the better living conditions at the mills. These causes in combination have served to lift the South to the bad eminence it occupies, in the matter of child labor. The census of 1900 shows that "to a greater extent than any other mechanical or manufacturing industry, the cotton mill is the employer of children." It also shows that "the proportion which children ten to fifteen years of age formed of the total number of cotton mill operatives in 1900 is almost three times as great in the southern states as it is in the northern and western. In the North, about one cotton mill operative out of every ten was ten to fifteen years of age, while in the South the corresponding figures were about three out of every ten. Not only do the cotton mills of the South employ more children in proportion to the total number of operatives, but they employ a relatively larger number of younger children."¹

Extent of Child Labor in the South

According to a recent estimate, the South now possesses, in round numbers, \$20,000,000,000 in property. Of this amount, ten per cent only, or \$2,000,000,000, is invested in manufacturing industries. As to the variety of these industries there are comparatively few in the nation that are not represented in the South of the present day. The lumber industry holds first place in the value of its products,

¹See Census Bulletin, 69.

with an annual output of \$365,000,000. A few children between the ages of fourteen and sixteen are employed in this industry, but under fourteen they are scarcely ever desired or allowed. For example, the census of manufactures, 1905, reports for the textile mills of North Carolina, 9,215 children under sixteen; for the lumber industry, including the furniture factories, 571. As we shall see, both of these estimates are underestimates, but they are relatively correct. The same authority gives 1,289 children employed in the tobacco and cigar factories. But among the other miscellaneous industries of the state none employed as many as a hundred children.

The cotton mill industry stands next to the lumber industry, with 841 mills in the South to-day, and eleven and a quarter million spindles. The cotton mill is only one of the textile group, which is represented also in the South by about 100 woolen mills, a score of silk mills and a dozen jute mills. In all these industries children are employed to a degree only less than that of their employment in the cotton mills.

The tobacco and cigar factories of Virginia, North Carolina and Florida are also the employers of children on a large scale. In Tampa, Florida, alone, the number of children employed grew in two years from a few score to 2,000, the few children of the Cuban and Spanish cigar-makers being increased by large numbers of native children, whose parents brought them as apprentices to the factories that they might receive the high wages still paid in that industry. The evil grew so suddenly that the people of Tampa united in a monster petition to the Florida Legislature to pass a child labor law, to prevent the further spread of the system. This was not only humane but intelligent from the commercial stand-point, as the employment of children always tends to bring down the scale of wages from the adult standard to the child standard.

Another child-employing industry on the Gulf Coast is that of oyster-packing, and this industry shows, in rather an unique way, how the social legislation of one state may affect others. The workers in these oyster-packing establishments are mainly Bohemians, brought from Maryland for the oyster season. Maryland has a poor child labor law, with a twelve year age-limit, and the counties are exempted from the operation of the law from June 1 to October 15. This means that children under twelve

years may be employed in the canneries, fruit and vegetable. Here are to be found in great numbers these Bohemians with all the children at work who are large enough to add their pittance to the family wage. Then, when the canning season is over they are induced by the agents of the oyster-packers to move to the Gulf Coast, where the children can also be employed in shucking oysters. I have seen children as young as eight and ten years of age, cutting the steamed oysters out of the shells, and with amazing facility. Thus the chief opponent of a child labor law for Florida and of any advance in child labor legislation is an oyster packer from Appalachicola. Meantime, the poor little Bohemian children have a poor chance at an education between migrations.

One other industry that employs far too many children is the coal mine. The evil is a grave one in West Virginia. It has apparently been checked by better law enforcement, in the recent past, in Kentucky. The mine inspector of Tennessee makes no mention in a series of reports, of the employment of children, except by way of describing certain occupations. It is reported that there are a considerable number of children in the mines in this state. In Alabama, my information is that the use of convict labor in the mines has largely precluded the employment of children. But in Oklahoma, since the passage of the recent child labor law, several hundred children have been dismissed from employment in the mines.

So much for the occupations that are the chief employers of children, outside of agriculture and domestic service, in the southern states. As to the number of children employed at the present time, it is impossible to do more than make an estimate from the figures given by the census of 1900, and the census of 1910 should soon give us exact information. The census bulletins of manufactures, issued in 1905, are utterly unreliable when it comes to the number of the children employed. For example one reports for the State of Florida, nineteen children, under sixteen, in the cigar factories. I saw twenty-five children, the same year, at work in one factory out of the many in Tampa. No one would accept, without corroboration, the estimate of a cotton-mill manager, known to be violating the laws of his state, as to the number of children employed. An aggregate of such estimates embodied in a census bulletin is of no more worth. Neither are

there state records of any value. Bureaus of labor have not as yet been generally established, and the departments of factory inspection have not undertaken a complete census of the working children of the state, with the exception of that of South Carolina, which has not yet been made public.

The Bureau of Labor for North Carolina, under a former chief, has some suggestive features, but it seems to have been employed in recent years for the purpose rather of concealing than of revealing the real number of the children. A study of it may be of some value as indicating the number of children employed in the cotton manufacturing states, namely the Carolinas, Georgia and Alabama.

The report for 1900 showed 7,598 children at work in the textile factories, under fourteen years of age; for 1901, 7,996. Then began the agitation for a child labor law which was successful in 1903. After 1901 the form of the question was changed and 929 children were reported under twelve years of age, only about two-thirds of the mills replying to this question, so that we might count 1,200 children under twelve, at least, according to the manufacturers' own reports, supposing all of them to have answered the question. After 1903 even this question was omitted. In 1904 the total number of operatives is given, as 57,555, male and female over twelve, and 309 are marked "Unclassified." It is a singular fact, that in spite of the law forbidding the employment of children under twelve, some of the manufacturers report a total number of operatives considerably in excess of the total for males and females over twelve years of age. But in the meantime, the number of employees, for 1904, 57,555 is the highest number that has yet been reached. As there was an inappreciable number of children dismissed from the factories in 1903, on account of the passage of the child labor law of that year, and investigations of the factories have demonstrated the wholesale employment of children under the legal age, while there has been a great exhaustion of the industry itself, the falling off of several thousand operatives from the reports would indicate the dropping of a number from the pay-rolls, who are still employed in the mills as "helpers," one of the most frequent evasions of the law.

From the report of the North Carolina Bureau for 1908 we gather the following facts: Miscellaneous factories, to the number

of 555, with an authorized capital of \$42,410,000, employing 30,000 persons, report an inappreciable number of children employed. Eighty-three per cent oppose and only eight per cent favor the employment of children under fourteen. Seventy-seven furniture factories oppose the labor of children under fourteen and eight favor it. But the form of the question was changed for the textile mills, and although in the meantime the age-limit had been raised to thirteen, 248 of these factories oppose the labor of children under twelve, while twelve favor even that. Some of the answers given in full are illuminating, if not enlightened: "I think children, especially boys ten years of age, should be allowed to work in mills." "Any child ten years old who attends school four months in each year, should be free to work the balance of the time anywhere else."

Others favor the raising of the age-limit to fourteen, the enforcement of the law, and the prohibition of night work for all women, and for boys over sixteen years of age, together with a shortening of the hours from sixty-six, the present legal standard, to sixty. But a representative lobby of cotton-mill men succeeded in defeating the bill before the recent legislature, which attempted to embody these ideas. With the thirteen year age-limit, one manufacturer writes: "I know absolutely that numbers of mills are employing children under twelve years old."

In South Carolina, the census of 1900 reported 8,049 children, ten to fifteen years of age at work in the cotton mills alone, thirty per cent of the whole number of operatives. Of these, 2,000 were between ten and twelve and there were in addition, 419 under ten. The number of operatives for 1909 has about doubled. Within the last six months, 1,500 children under twelve, who were illegally employed, have been dismissed from the mills by the new factory inspection department. That does not include the number under twelve who are legally employed, so that the number of children under twelve, at work six months ago, was probably larger than in 1900. But the child labor law must have had some deterrent effect, to say nothing of the greater pressure of public opinion. Let us hope that as many children under age were excluded from the mills, by the manufacturers as were employed. This would indicate very nearly twice as many children under sixteen, to corres-

pond to the increased number of operatives, as in 1900, say 16,000 in one industry in one state.

Legislation and Law Enforcement

The present status on the legislative side is at least encouraging. Since 1900 every southern state has either passed its first child labor law or has amended an old law in the right direction, or both. In Virginia, Kentucky, Tennessee, Louisiana, Arkansas, and Oklahoma, the fourteen year age-limit has been reached, Oklahoma, having an eight hour day for children under sixteen, Kentucky a nine hour day, and the others a ten hour day. In all these states except Arkansas there is factory inspection, especially effective in Oklahoma, Kentucky, and Louisiana. Maryland, West Virginia, where the employment of children in the glass-works is a great evil, Florida and Texas, retain the twelve year age-limit, with a sixteen year limit for mines in Texas, but the prospects for a more advanced standard are bright in all these states, in the absence of the organized opposition of the cotton mills. There remain the cotton mill states, North and South Carolina, Georgia and Alabama, to which may be added Mississippi, which, though it has but a score of cotton mills, is so pre-eminently a rural state that the cotton mill is its most conspicuous manufacturing industry.

In these states the age-limit remains at twelve, except in North Carolina, which has reached the thirteen year standard. But North Carolina, as does Georgia, retains the inhuman sixty-six hour week, which means a twelve hour day for the first five working days of the week, and North Carolina reports fifty-four mills doing night work, the age limit for night work being fourteen, while South Carolina reports ten such mills, though children under twelve years of age are not allowed to work later than eight p. m. South Carolina allows children of any age to work in the mills if they are the children of dependent parents, or are orphans, and these children are allowed to work as late as nine p. m. South Carolina had adopted a sixty hour week "or ten hours a day," but the last legislature allowed the manufacturers to go back to the eleven hour day, though retaining the sixty hour week.

Georgia also allows children as young as ten to work in the mills if they are orphans or the children of dependent parents. But it

has an age-limit of fourteen for illiterate children and requires children to attend school each year until they are eighteen as a condition of working in the factories the following year. Alabama makes such a requirement for children under sixteen, it has a straight twelve year age-limit, with no exceptions, forbids night work for children under sixteen and limits the hours of night work to eight, for those between the ages of sixteen and eighteen. Alabama also has a sixty hour week. Mississippi has a fifty-eight hour week.

It is in these last-named states that the longest and hardest fight for the rights of the children may be expected, and the reason is the importance of the cotton mill interests. The same reason has left New England behind such great manufacturing states as New York, Ohio, and Illinois, with an eight hour day for children. These states are lacking in cotton mills. Massachusetts and Rhode Island have just reached the fifty-six hour week, the other New England states with Pennsylvania have a fifty-eight hour week for the working children.

As to law enforcement, neither North Carolina nor Georgia have the semblance of factory inspection. The violations of the law are open and shameless and innumerable, as proved by recent photographic investigations. Alabama has created a department for the inspection of jails, factories and alms-houses, with one inspector and one assistant. But on account of the illness of the present inspector and of his predecessor, very little has been done. The most hopeful sign of an end of child labor in the southern cotton mills is the activity of the factory inspection department in South Carolina. Commissioner Watson has two efficient inspectors under his direction. It is to be hoped that his work will not alienate the support of the cotton mill interests which he has formerly enjoyed.

Against the organized opposition of the cotton mills to a standard child labor law and the earnest enforcement of its provisions, there is on the other hand a gathering force of public opinion, to which the manufacturers are growing gratifyingly sensitive, which legislators will not be slow to obey. For reasons that have been often stated, only the white native children of the South are employed in the mills. They make a peculiar and effective appeal for protection at the hands of the state. The argument in their behalf has already been stated and is well understood. For if the child labor system, in anything like its present proportions, should con-

tinue, as it continued for a hundred years in England, with operatives of the same racial stock, we may look for the same consequences as inevitably following, namely, racial degeneracy, perpetuated poverty, the enlargement of illiteracy, the destruction of democracy, the disintegration of the family, the increase of crime, the lowering of the wage-scale and the swelling of the army of the unemployed.

ECONOMIC NEEDS OF THE SOUTH

BY WILLIAM H. GLASSON,
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Just before his death, the late Edward Atkinson, one of the frankest and most helpful critics of the South, wrote to the "Manufacturer's Record," a letter which might be taken as a text in discussions of ways and means for the economic development of the southern states.¹ In the course of that letter, he deprecated what he thought to be undue emphasis that had been placed on the promotion of the cotton manufacture in the South, and urged the more pressing need of an improved agriculture. His words were:

While you have poured capital, both southern and northern, into great factories and iron works, have you not neglected the very foundation of your prosperity, that is, agriculture? Have you yet surmounted the evil methods of the old system? What part even of your cotton land has been subjected to deep and thorough tillage, to renovation, to intelligent and intensive cultivation? To what extent have you increased the old meagre crop per acre of an average of 200 to 225 pounds, and on the uplands even less, when in point of fact, if intelligent and intensive methods are applied, with right tillage and renovation of the soil, double that crop can be made on every acre, with less labor and under better conditions? Is not that work being done by a small number of intelligent white farmers and a yet smaller number of intelligent colored farmers, yet sufficient in number to prove the general shiftlessness of all the rest?

This severe arraignment of southern agricultural methods has been in substance confirmed by intelligent observers and writers of that section of the country. The South has suffered both from a too exclusive dependence on the main money crops, and from a failure

¹Edward Atkinson died suddenly on December 11, 1905. On that very day the "Manufacturer's Record" received from him a letter dated December 8th. He had been asked to express his judgment as to the course of that paper in its efforts to promote the development of the South. His reply was not the indiscriminate praise common on such an occasion, but rather frank and suggestive criticism. The circumstances render especially striking this last message from one who had always shown a keen interest in southern affairs. See "Manufacturer's Record" (Baltimore, Md.), December 28, 1905, p. 619.

to apply progressive methods to the cultivation of these crops. Supplies for man, and food for the live stock, which might have been raised at home, have been purchased from abroad at high prices. Failure of the main crops, or unfavorable prices in the markets, have been all the more disastrous because of a neglect of numerous minor crops which might have been exceedingly profitable. The great staple products have very frequently been cultivated in a wasteful and unprogressive manner. Take cotton, the most important of all, as an illustration. For a long time the cotton seed was considered of little use, and often thrown away. Then its value for oil and as a fertilizer became known. But cotton-seed meal, a most valuable cattle feed, is to-day used in large quantities as a fertilizer, when it might first be fed to cattle and three-fourths of its fertilizing value still be obtained in the manure from the animals. Millions of dollars in animal feeding values are being wasted annually in using cotton-seed meal as a fertilizer.²

Again there has been a lack of attention to seed selection in the cultivation of the cotton crop. Seed taken at random from the gin cannot produce the best results. As a result of actual tests, it is asserted that by a proper selection of seed during a ten-year period the average yield per acre could be increased twenty-five per cent. Another failure is the lack of a proper system of rotation, including leguminous crops such as the cowpea. This would supply abundant nitrogen to the soil. As it is, great expenditures are incurred for nitrogenous fertilizers which might readily be saved. Other improvements are needed in ginning, baling, and handling the cotton.

In recent years, however, earnest efforts have been made to better southern agricultural conditions, and encouraging progress has been achieved. Agricultural experiment stations have conducted important investigations, and the agricultural press has been especially valuable in interpreting the results of such investigations to the actual farmers, and in conducting a systematic agitation for an agricultural revolution in the South. This agricultural revolution is a great and fundamental need of the day. Most helpful in bringing it about has been the coöperative demonstration work organized among the farmers of many localities of the South

²See article by Charles H. Poe on "Enormous Leaks in Our Cotton Farming," *South Atlantic Quarterly*, April, 1906, p. 128.

by Mr. S. A. Knapp under the auspices of the United States Department of Agriculture. Great good has been done by Mr. Knapp and his associates through the process of teaching by example. The most progressive farmers in a locality are selected, and the representatives of the government undertake to teach better methods by working along with them on their own land. Success under such conditions makes the selected farms powerful object lessons for the raising of the standard of agricultural methods in whole communities.

Mr. Knapp has proposed that the same methods be applied to agricultural instruction in the schools. He does not think that agriculture can be acquired from text books or object lessons. These may be illustrative and helpful, but so far as practical results are to be attained, learning must be by doing. Much has been said recently in favor of the introduction of agriculture into the curriculum of the secondary schools. To be of value, Mr. Knapp maintains that such instruction must put the stress on the cultivation of small fields by the pupils themselves.³

Besides the introduction of better methods in the growing of the staple products, another need of southern agriculture is the development of profitable minor crops. Here again encouraging progress has of late been made. Take a few illustrations from the single State of North Carolina. It has been discovered that tracts of land in eastern North Carolina, which were formerly considered of little value, are admirably adapted to the raising of early vegetables and fruits for the northern markets. Around Fayetteville, N. C., has grown up an important lettuce growing industry. The lands in that vicinity along the upper Cape Fear River are said to be especially well adapted to this plant. They also have the further advantage of being midway between the semi-tropical region of the far South, where the crop comes very early, and the colder trucking sections farther north, where the season is much later. The North Carolina growers are able to possess the market in the intervening period. Lettuce growing means the intensive cultivation of comparatively small tracts of ground, and a net profit of from \$800 to \$1,000 an acre is frequently made.

³S. A. Knapp, "The Study of Agriculture in the Secondary Schools," *South Atlantic Quarterly*, April, 1907, p. 135.

While the lettuce crop does best on loamy soils, a use has been found for the dry, sandy soils of eastern North Carolina. Unproductive sand plains are being turned into blooming berry fields. Here the dewberry thrives and yields a profitable return to the grower. Sixty crates to the acre is a good yield, with the price varying from \$3.20 to \$4.80 a crate.⁴

Earlier than the dewberry crop is the North Carolina strawberry crop. This has brought prosperity to the territory around Chadbourn, in Columbus County. Fifteen years ago this section was regarded as one of the poorest in North Carolina. It was undeveloped, and the people had devoted their time chiefly to the turpentine and lumber business. Strawberry growing was commenced in 1897, and 600 crates were shipped that year. The business has grown so that in the last five years 1,144,000 crates were shipped from the Chadbourn territory, and the Columbus County growers received for their berries during that period a total of about \$2,500,000. In 1909 the growers received about \$700,000.⁵

These illustrations drawn from a part of one state are typical of what is going on in many localities all over the South. Mention might be made of the increasing apple orchards of western North Carolina, of the peach and melon production of Georgia, of the varied vegetable and fruit production of late developed in Florida, of the onions of Texas and so on. As important money crops, practically all these have either sprung into existence or reached a more than local market in recent years.

Closely connected with the problem of agricultural development is the need of good roads over which the planter can take his crops to the local market or to the place of shipment. Here active and organized work is being done. Many southern counties have already built most creditable systems of roads. The North Carolina legislature of 1909 passed one hundred and thirty-one acts relating in some way or other to public roads. Eighteen of these acts related to the issue of bonds by various counties and townships for the construction of better roads. Fifteen were concerned with the levying of special taxes for the purpose of road building. In some

⁴See article by Rev. Thomas A. Smoot on "Some New North Carolina Industries" in the *South Atlantic Quarterly*, October, 1905, p. 325.

⁵Speech of State Senator Joseph A. Brown in the "News and Observer," Raleigh, N. C., October 3, 1909.

cases the bonds or special taxes have been authorized; in others progressive public sentiment was not yet strong enough to carry the election. However, such gatherings as the recent Southern Appalachian Good Roads Convention at Asheville, in which several states were represented and many influential men participated, give promise that the friends of good roads are to carry on an aggressive educational campaign.

Turning from agricultural development to that of manufactures, it is worth while to note the views expressed in the letter of Edward Atkinson to which reference has previously been made. He argued that the South has placed undue emphasis upon the development of cotton manufacturing and said that "the progress and welfare of a state would be vastly more promoted by developing the small industries that require little capital, that call for mechanical aptitude and intelligence, than by establishing great factories of any kind." In criticizing the course of the "Manufacturer's Record," which has shared with many southerners the idea of bringing the whole cotton manufacturing business to the southern states, Mr. Atkinson said:

The inducements held out were long hours, low wages, to a certain extent child labor, proximity to the cotton field and a warm climate—all in some measure a disadvantage rather than an advantage. In the course of time all this has become apparent. It has been proved that long hours, especially night work, are unprofitable on modern high-speed machinery. The most intelligent and progressive cotton manufacturers are now keeping children out of their mills and providing them with education. Proximity to the cotton field, where the cotton mills exist, has proved to be a delusion after the coarse work had been passed by to fine work requiring strong cotton. The supply is drawn from the same sources supplying New England; there is no advantage in proximity. The mills have been constructed so rapidly that the source of labor is exhausted, and there is no French Canada or volume of immigration to fall back upon. Wages are rising and help is very scarce.

There are 364 titles to the manufactures of the nation. How many of these are listed in the old cotton states, or rather, I should ask, how few? You can pick out certain cities in the South that have developed from within on their own muscle that are thriving on small industries. How soon will this come to be the rule and how soon will the deposits in your savings banks, belonging to the intelligent mechanics and artisans who work your small industries, begin to equal the deposits of the same class in the New

England states, in New York and Pennsylvania? My own reply would be, when your common schools and your common education have been brought nearer to the true standard, and the illiteracy of white and black alike has been overcome.

At present diversified manufacturing industries are more needed than additional cotton mills. Not that the cotton mill has failed to prove a blessing. It has been a large producer of wealth for the owner, and, with all its defects, it has clearly brought about a substantial advance in the condition of the class of people from which its operatives have been recruited. The enlightened self-interest of the most progressive of the manufacturers, stimulated and backed by an awakened public sentiment, is tending to remove the worst of its defects. Hours are being shortened, night labor is being abolished, and greater limitations are being placed upon the labor of children. There is also general recognition of the need of further progress along such lines. But, when all this has been said, it is nevertheless true that an almost exclusive reliance upon the fortunes of one or two large industries is not desirable. There are obvious advantages to those towns and cities which are built up on the basis of many and varied industries. In such towns business conditions are likely to be much more stable, and periods of depression will be less violently felt.

It is worthy of note, too, that the cotton mill industry has usually established its villages on the outskirts of towns or in the country. The isolation of mill workers from the social interests and advantage of a larger community life has been unfavorable to their development. It has tended to preserve a certain class or caste feeling which often keeps the cotton mill operatives apart from sympathetic and helpful relations with other citizens. Such a class isolation is not so likely to exist among the workmen of smaller and varied industries, who do not ordinarily live together in the monotony and segregation of the average mill village. The merging of the various classes of workmen in the general life of the community seems more favorable to the development of intelligence, enterprise and usefulness as citizens.

Other needs of great economic importance to the South are the improvement of the public health and the betterment of public educational facilities. Dr. Charles W. Stiles has shown that in all probability the shiftlessness commonly attributed to a large por-

tion of the labor force of the South is due to the ravages of the so-called "hookworm disease." If but a fraction of the damage, inefficiency, and suffering charged to this intestinal parasite is conceded to be caused by it, the eradication of the disease would be a work of the highest economic consequence and importance to the South. Mr. John D. Rockefeller's recently announced gift of \$1,000,000 to be used under the direction of an able commission in a systematic campaign against this disease is a striking example of wise public spirit and humane regard for the welfare of untold numbers of the unfortunate. Other progressive efforts are needed in behalf of sanitary improvement in both city and country. Such work is distinctly on the increase in recent years. It is encouraging to note activity in many states in the fight against tuberculosis and also the organization of forces to deal with the existence of the recently recognized pellagra.

In the extract which has been quoted from Edward Atkinson's letter, a better standard of education was truly set forth as the fundamental need of the South. Much has been done in the last ten years. But the proportion of children of school age not in the schools is still large. The mills and factories often take the children before they have had sufficient school opportunities. This is frequently due to the unwise haste of their parents to put them at work. In many of the poorer communities public sentiment will not yet grant sufficient taxes to maintain good schools for a term of reasonable length. But the whole tendency of the times is forward. Greater wealth production will make better schools possible, and increasing intelligence of the masses of the people will aid the success of every movement under way for the economic development of the South.

NEW POLITICS FOR THE SOUTH

BY JAMES W. GARNER,

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While the material and intellectual progress of the South during the last quarter of a century has been extraordinary, politically it has remained stationary. Its political thought has been that of a single party whose sway for the most part has been absolute and undisputed. During this time the southern white people have exhibited little difference of opinion on the great political issues that have divided the people of the rest of the country though of course they differ widely among themselves on religious, educational and other questions. This unnatural condition of political sentiment, however, has not always existed in the South. In the old days before the civil war when the South held the leadership in national affairs, the white people were pretty evenly divided among themselves on all political questions upon which a natural difference of opinion was possible. In every southern state there was a Democratic and a Whig party and each rivaled the other in numbers of adherents and respectability of character, sometimes one and sometimes the other holding the reins of power. In the presidential election of 1840, for example, we find the Whigs of Alabama, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Kentucky, Tennessee and Virginia in the ascendancy; in 1844 we find the Democrats of North Carolina, Kentucky and Tennessee carrying their states by slight majorities; in 1848 the states of the South were about equally divided between the two parties; in 1852 all of them except Kentucky and Tennessee were carried by the Democratic party though everywhere the Whig vote was large and respectable.

During the reconstruction period when both white men and negroes voted there was still more or less division among the white voters of the South. The extravagance and corruption of the reconstructionists, however, finally drove the white people to unite solidly against their oppressors by which means the reconstructionists were driven from power and the saturnalia of mis-

rule in the South was ended. From then until now the political solidarity of the South has been an established fact. The white men of that section have stood together in political matters often sacrificing their individual convictions upon questions of national politics, in order to prevent the return to power of those who oppressed them during the time when they were powerless to resist. Since the overthrow of the reconstructionists, therefore, there has been practically but one political party in the South, and that a white man's party, and there has been but one great issue, namely, the maintenance of white supremacy. The mind of the South is always made up, and there is never any doubt before a national election as to what the result will be. The act of recording their opinions at the ballot-box so far as national elections are concerned is nothing more than a perfunctory compliance with the forms of the constitution, and has no meaning or significance to the South or to the country at large. Under such circumstances national elections in the South have become pretty much of a farce, not only because of the ridiculously small number of the voters who participate in them, but because the returns manifestly do not represent the real opinions of the voters on the national questions at issue. At the presidential election of 1904, for example, only 63,000 votes were cast in Louisiana out of a total registered electorate of 326,000. In Mississippi at the same election, with a registered vote of 120,000 only 58,500 voters took the trouble to go to the polls.¹ In South Carolina the number who voted was but 55,000 and in Florida it was but 35,000.

A national election in the South usually involves no contest and hence it is not to be wondered that only a comparatively small part of the electors feel enough interest to go to the polls to help swell the majority of candidates against whom there is practically no opposition. Such a condition of affairs in a democracy where party government and government by discussion are essential principles of the constitution is unnatural and unwholesome. It not only means the absence of a valuable check which is at once the justification and chief advantage of party government, but it means the loss of an important educational benefit which comes from the discussion and elucidation of public questions.

¹In the congressional elections of 1898 only 27,000 votes were cast in the seven congressional districts of Mississippi.

So long as the white people of the South were exposed to the dangers of negro domination they were justified in acting together to prevent the return to power of the party which had once imposed upon them the incubus of negro rule and which might do so again if the opportunity were offered. The motive back of this feeling was not that of hatred or revenge but it was the simple instinct of self-preservation. Now, however, that the supremacy of the white race is fully established and the right of the white people to govern is everywhere readily admitted, the excuse for the political solidarity of the South on national questions no longer exists. In most of the southern states the great mass of the negro population has been disfranchised and the people of the entire country have acquiesced, to say the least, in the action of the South in providing constitutional safeguards against the return of the negro to power. Nearly twenty years have elapsed since Mississippi adopted a constitution which, in effect, took away from the negro his political privileges, and although the party which had conferred political rights upon him has been in control of the national government during most of this period, no serious attempt has been made to interfere with the action of the state or to punish it by reducing its representation in Congress as the fourteenth amendment declares shall be done. Hardly a sincere and respectable protest against the disfranchisement of the negro has yet been made by the Republican party, and recent events would seem to justify the conclusion that it has virtually abandoned him so far as his political rights are concerned.

The people of the North are now in substantial agreement that the South shall be allowed to deal with the negro problem in its own way so long as the negro is accorded the inherent civil rights of person and property to which he is entitled as a human being and a citizen. The declarations of the Republican national platforms in favor of the strict enforcement of the fourteenth and fifteenth amendments, as everybody knows, and as many of the Republican leaders themselves frankly admit, are merely for political effect and are not intended to be taken seriously. As Mr. Albert Shaw has recently observed in the "Review of Reviews,"² the Republican party has not the slightest intention of reducing the representation of the southern states for disfranchising the

²December, 1908, p. 650.

negro. Mr. Roosevelt, who certainly had a right to speak for the Republican party, declared in a letter last November to W. R. Meredith, president of the Virginia Bar Association, "I do not believe there is a single individual of any consequence who seriously dreams of cutting down southern representation and I should have no hesitation in stating anywhere and at any time that as long as the election laws are constitutionally enforced without discrimination as to color, the fear that southern representation in Congress will be cut down is both idle and absurd." The truth is, there is hardly a man of note in the North to-day who would, if he could, take away the admitted right of the southern states to restrict the elective franchise to such of their citizens as in their judgment are most fit and capable of exercising it for the public good. Our conclusion on this point, therefore, is that the doctrine preached by a certain class of politicians that the continued political solidarity of the South is necessary to prevent the Republican party from forcing negro rule upon the people of the South has no basis upon which to rest and they should not allow themselves to be deceived by such demagoguery. It has been settled once for all that the South shall be let alone to determine according to its own sense of justice and expediency the conditions under which political power shall be exercised within its borders and the question, therefore, of the right of the white race to govern ought to be removed from the domain of political controversy. The calm judgment of the fair-minded people of the South must be that, on the whole, the attitude of intelligent northerners toward the South in its effort to rid itself of a corrupt and ignorant suffrage has in recent years not only not been unreasonable but that, on the contrary, it has been marked by a spirit of liberalism, fair-mindedness and sympathy.

Both Presidents McKinley and Roosevelt in fact appointed almost as many Democrats as Republicans to important offices in the South, and in the great majority of cases where Republicans were appointed an honest effort was made to choose men of character who enjoyed the confidence and respect of the people of the communities concerned. President Taft is following the same policy, yet we sometimes hear such claptrap as that recently attributed to one of the Georgia senators that the people of the South are still ostracized and treated as aliens by the government at Wash-

ington. It is difficult to believe that the intelligent men of the South are capable of being misled by such puerile appeals to their passions and prejudices.

Turning now from the attitude of the North to the actual political situation in the South we find that there is hardly a community in any southern state in which there is any considerable white population where the white people are not in political control. Even in the counties of the black belt where the negro population sometimes outnumbers the white population in the proportion of ten to one and even fifteen to one, with a few exceptions, the local offices are all held by white men. With all the millions of negroes in the South there is not a black representative in either house of congress or in any state legislature; not one holds a state office and, except in a few towns inhabited almost wholly by negroes, there are practically none holding local offices. The truth is the negro is virtually out of politics in the South. Many thousands of those who might register as voters feel no interest in the elections or at least not enough to comply with the conditions required of voters. Practically everywhere the white race is in control and it will continue to remain in control. No one knows this better than the negro himself and it is not too much to say that he has accepted this situation as one of the inexorable facts of his existence. If the white people of the South exercise their power of control wisely and justly it can be perpetuated to the end of time without protest or interference on the part of the country at large or indeed without serious opposition from the black race itself. The question of white supremacy therefore is no longer a living issue and as a subject of political discussion it may be safely relegated to the limbo of oblivion. The problem of the extent and quality of the education which the negro should have, how his efficiency as a laborer and his usefulness as a citizen may be increased, how his criminal instincts may be curbed and his respect for law and authority increased, are, however, problems which the South must still meet and solve but they are not national political issues upon which the southern people must vote at every national election or which should be allowed to absorb their whole thought to the exclusion of other questions. The time has come when the people of the South should cease to allow themselves to be frightened by what President Taft has called the specter of negro domination and should begin to express their

sentiments on the living issues of the time rather than upon questions which are settled and from which only harm can result by their continued agitation. The South ought to free itself from the thralldom of a single issue and give more consideration to the great economic and political questions which divide the people of the rest of the country and with which their own progress and welfare are bound up.

The principal argument against the division of the white voters of the South into two political parties is, that it would pave the way for the return of the negro to power. But the facts hardly justify such a conclusion. Prior to the Civil War when the Whigs and Democrats of the South were almost equally divided upon the question of the bank, the tariff, internal improvements and other great national issues, they stood solidly together on the slavery question, with the result that the Abolition party never gained any headway in the South. Is it not natural to suppose that the white men of the South can vote differently upon issues which divide the people of the North and the West and yet remain united on the question of the political status of the negro? Does it follow that if they should differ among themselves as to the wisdom of territorial expansion, the desirability of a protective tariff, the advantages of a particular monetary system or the expediency of subsidizing the merchant marine they must also divide on the question of political rights for the negro? There is no good reason why they cannot be divided on economic issues as the fingers of the hand, to use a figure employed by Booker Washington, and yet remain united as the hand itself on the question of white supremacy.

It seems to me that there is a place in the South for a political party with other issues than the race question—a party which will make itself the exponent of some of the living, economic and educational questions of the time and fight its battles upon constructive, progressive policies of vital interest to the development and prosperity of the South rather than upon the old issues growing out of the civil war and the reconstruction period. We have had quite enough agitation of dead issues by small politicians whose chief stock in trade is the negro question in some form or other and too little wholesome discussion of economic and industrial issues of practical interest to the people of the South and the country at large. We have lately seen in the South the

upgrowth of a new school of politicians who have risen to power largely through the exploitation of the race issue. Instead of proposing and championing constructive policies of live interest to the people of their states they have appealed mainly to the passions and prejudices of the masses by indiscriminate abuse of the negro, by dwelling upon his brutality, criminality and mental inferiority, by denouncing the Republican party for its sins and mistakes in the past and by recounting and often magnifying the evils and humiliations of the reconstruction period and thus keeping alive and perpetuating old animosities that had better be forgotten. We have recently seen an unimportant political campaign in one of the southern states conducted almost entirely on issues of this kind, issues that were not real and natural but were injected into the contest largely because they were capable of being turned into political capital.

In several other Southern States the question of the negro in one form or another has recently been an important if not the leading issue, and it is well known that more than one southern man in public life to-day has attained his honors largely through the successful exploitation of the negro question though in no instance was it a natural or real issue.

There is a tendency among the southern people, and especially among the southern politicians, to become obsessed with the idea that there is only one great, vital and fundamental question of interest to the South and that the question of the negro. As a southerner, viewing the situation from the outside, it seems to me that the people of the South are in danger of allowing themselves to be completely absorbed by this single issue when in reality as a subject of political controversy it belongs to the past rather than the present. There is also a disposition, it seems to me, among many southern people to exaggerate the peculiar conditions and problems of the South, to fancy that what is expedient and good for the rest of the country is not wise or suitable for them and that in many respects the South must be treated differently from the North and West. The Reverend John E. White, of Atlanta, in a recent discussion of this question says:

As long as we struggled for that which was good for everybody everywhere, we moved with Providence and the South led the van. There were great human concerns involved in the building up of the republic. The whole

world was interested in it. It was a work ennobling to a people—the inspiration of a great national usefulness. The disaster began when the South began to think only for itself—began to have only one problem. Monomania is a disease. This is the final fact, though other causes were contributory to it. This is the false note in southern life. The question for safe and sound citizenship, then, is the question of getting ourselves free from the thrall of one issue and of interesting the people in matters that stimulate life and that generate moral and intellectual energy. What I ask you, and what I wish every thoughtful southern man to consider is whether the Negro question is a fair price for southern progress—whether there are not for us and our children other and greater benefits which are endangered by our absorption in it? It is whether the Negro question is great enough to make a great people?

I have been much of my life intimate with average southerners—the people in the country sections—and I have marked it that this average man responds at once to the idea that we would be better off, everything would be better off, if we were less absorbed in this one question. There is an unorganized and undeveloped moral instinct in the South that it is an unhealthy, unprofitable business. Now, for ten years the South has had a flood of agitation on the Negro problem. Let us take stock and see where we are. We are less fit to think straight and feel true on the subject than we were ten years ago. Mentally and morally, we are less capable of statesmanship on the subject than we were.^a

I agree with Mr. White that the South ought to free itself from the thrall of a single issue and devote more of its energies to the solution of the living problems which really confront its people. I have sometimes thought that if the time and talent expended by the newspapers and public speakers of the South in discussing such matters as the Booker Washington and Minnie Cox "incidents" had been devoted to a consideration of such questions as the conservation of the resources of the South, the improvement of its schools or some other question of real importance, the result would have been much more beneficial to its people. It has always seemed to me that the amount of attention bestowed upon such matters in the South is out of all proportion to their importance and that there is too little wholesome discussion by its public men of larger questions of vital interest to the people.

The solidity of the South politically and the persistency with which it has clung to the negro issue to the virtual neglect of other and more important questions has produced a somewhat unusual and unnatural condition of affairs in that part of the country. In the

^aThe "South Atlantic Quarterly," Vol. V, p. 106.

first place the southern mind has allowed itself to become so engrossed with the negro question that it has to a certain extent become incapable of clear and unbiased thinking upon economic and other questions of interest to the South and the country at large. Absorption by a single question has a natural tendency to obscure the vision, weaken the sense of perspective and to unfit one for sound and wholesome consideration of other questions. The political intolerance which necessarily results from the feeling that the solidity of the South must be preserved in political matters has tended to deaden the higher intellectual activities of the people and to create an atmosphere unfavorable to the development of an independent and vigorous constructive statesmanship among its public men. It has frequently been observed of late that the South has not produced a really great statesman during the last generation. Too many of the southern leaders live on theories and on the past. The South has lately been reproached by some of its own distinguished men⁴ for allowing itself to become the chosen home of nearly every political and economic vagary known to the country and too often when its natural leaders have asserted their independence and refused to champion popular heresies and fallacies, they have been retired to private life. The careers of John G. Carlisle, Roger Q. Mills, Thomas C. Catchings, John L. McLaurin and others might be cited as examples in illustration of this point.

As I now write some newspapers of the South are denouncing as a traitor the present Secretary of War, a distinguished southerner of whose character and attainments the whole South may well be proud, because, on a notable occasion, he recently expressed the opinion that it was better for the South that the cause for which it contended during the Civil War was lost. As long as the South encouraged independence of political thinking, as long as it thought nationally on the great questions of the day and refused to be absorbed by a single issue it had great leaders, thousands of northern people followed them and helped the South to elect Presidents and Vice-Presidents, and enabled it to play a part and exert an influence in national affairs worthy of its great place in the Union. But of late years the southern democracy, as ex-Senator McLaurin, of South Carolina, well says, "has become mongrelized by an infusion of

⁴ For example by Professor Trent, Mr. Walter H. Page, editor of "The World's Work," ex-Senator McLaurin of South Carolina and President Alderman of the University of Virginia.

Tillmanism, Vardamanism, populism, socialism and other 'isms,' " it has persisted in clinging to old issues that ought to be abandoned and forgotten or to others which do not interest the people of the rest of the country; it has in short refused to adapt its political thought and action to the new and changed economic conditions under which the people now live. Under such circumstances thousands of people in other parts of the country whose natural sympathies are with the Democratic party and who would act with it if it were abreast of the times are now voting with the Republican party in national elections. In recent years we have seen the people of Massachusetts, Minnesota, Ohio, Rhode Island and Indiana voting by large majorities in favor of Democratic governors yet voting by still larger majorities for the Republican national ticket. Some states indeed which have not voted for a Democratic President in forty years now have Democratic governors and other state officials.

I venture the opinion that if the Democratic party of the South were to rid itself of the vagaries of which ex-Senator McLaurin speaks, turn its back upon the old issues growing out of the Civil War and reconstruction period, and take up the advocacy of sound constructive progressive policies in which the South and the country at large have a real interest not many years will elapse before we shall see it in power at Washington. But until that is done the Democratic party will probably continue to pursue a forlorn hope. To-day it is almost without a representative from the North in the Senate of the United States to champion its policies, while political effacement of the South in national affairs is well nigh complete, though its material and intellectual power has been vastly increased. Candor compels me to believe that there is a good deal of truth in the recent statement of President Taft at Greensboro, N. C., that "if the southern people had kept up with the times, had they at the ballot-box expressed their sentiments on the living issues of the day instead of allowing themselves to be frightened by a specter and a shadow of the past, their political importance as communities and the significance of their views upon measures and men would have been vastly enhanced." His assertion that the South has been kept solid by the "bogey" of negro domination and by the success of the politicians in stirring up and keeping alive race prejudice and by keeping the people in a state of alarm over an impossible return of the conditions of the reconstruction days is a truth too widely admitted to require argument.

The late Senator L. Q. C. Lamar, in a notable address at Jackson, Miss., in 1875, following the overthrow of the reconstructionists in that state, predicted that the negro question had been eliminated from the domain of political controversy and that henceforth the southern people would be free to turn their attention to the great economic questions that were then demanding their consideration. But within recent years we have seen all other questions in Lamar's state give way to a discussion of the negro, in a campaign characterized by a spirit of bitterness and radicalism never before seen in Mississippi since the days of reconstruction. I am certain that had Lamar been living the great weight of his influence would have been thrown against the revival and agitation of the old issues which he thought were settled and forgotten. Nothing but harm to the South can come from this revival of race agitation. It not only tends to alienate from the support of the Democratic party people of the North who are naturally Democratic in their sympathies and traditions, but it serves to irritate the public mind of the South, keep alive and perpetuate old animosities, arouse distrust and hatred, unsettle business conditions, array the white and black races against each other, keep desirable immigrants out of the South and retard clear and wholesome political thinking, through the injection of false issues into the politics of the South. The assertion of certain politicians that the repeal of the fifteenth amendment is necessary to the perpetuity of white supremacy in political matters and the preservation of peace and harmony between the white and black races is nothing but the cheapest demagoguery while the social equality and negro domination fears are, as I have said, the merest "bogies" from which the people of the South no longer have anything to dread.

Fortunately the signs indicate a growing change of sentiment in the South. The number of men who are moved by appeals to their passions and prejudices is growing smaller and the discontent with the economic doctrines of the new Democracy is spreading throughout the South. Many thoughtful southerners are growing tired of voting on dead issues or for principles that are repugnant to their honest convictions. What Senator Tillman has stigmatized as the "commercial democracy" of ex-Senator McLaurin has far more supporters than appears on the surface, and some day it will have to be reckoned with. The tremendous

industrial growth of the South and particularly the rise of manufacturing have created conditions with which the Tillman brand of democracy is out of harmony. The recent debates in Congress over the tariff question and the attitude of many southern members show that the Democratic doctrine that a protective tariff is robbery and a fraud is losing much of its old time sanctity. Likewise the sacrosanctness of the old doctrine of states rights has lately suffered a terrible blow. In recent years we have seen the South supporting with enthusiasm a federal quarantine law, federal regulation of railway traffic, federal inspection of slaughter houses, federal pure food legislation, what amounts to a federal prohibition law and other national measures which a few years ago would have been opposed on the ground that they involved an infringement upon the reserved rights of the states. Finally, the election returns indicate that the people of the South are beginning to show a greater independence in their political thinking and in their voting at national elections. I have before me as I write the official returns of the presidential election of 1908 in Alabama, which show that Taft carried six counties in that state and that in as many more counties the vote was almost equally divided between him and Bryan. In Arkansas and Florida he received more than one-third of the popular vote, in Georgia considerably more than one-half as many votes as Bryan; he carried Maryland; received only some 20,000 votes less than Bryan in North Carolina out of a total of 251,000; in Tennessee only 17,000 less than Bryan out of a total of 253,000; in Virginia only 30,000 less and in Kentucky only about 9,000 less out of a total of 480,000.

The signs would seem to indicate, therefore, that the new democracy is losing its hold upon the people of the South, and unless it finds new issues in the near future the political solidarity of the South will be a thing of the past. I agree with the president of the University of Virginia that in time there will be a "rebirth of party government" in the South and that "two or more parties representing the intelligence and patriotism of these states will divide and consider issues on their merits," and that some day "southern men will win the presidency because they will incarnate the thing people desire a President for."

BOOK DEPARTMENT

NOTES.

Addams, Jane. *The Spirit of Youth and the City Streets.* Pp. 162. Price, \$1.25. New York: Macmillan Company, 1909.

American Foreign Policy, by a Diplomatist. Pp. vii, 192. Price, \$1.25. Boston: Houghton, Mifflin & Co., 1909.

Our connection with all the important changes in international affairs is the theme the author sets himself. Expanding commerce has brought us in spite of ourselves into the field of politics, even in the countries of the near east. Diplomacy as a consequence is undergoing a new development. Its functions can no longer be divorced from trade. We must be prepared to exercise direct supervision over the Carribean, Central American revolutions must not be allowed to endanger our interests in the Panama region, and even in European affairs we must cast aside the policy of inaction which was suited only to the time when steam and the telegraph had not destroyed the effect of great distances. In countries undeveloped in manufactures our interests should have an aggressive representation—there especially our business men should be guaranteed an equal opportunity to share in concessions for public improvements, and there, too, the possibility of tariffs for protection is least. Turkey, Asia Minor and Persia should for this reason be second only to the Chinese Empire in the attention given them by the State Department. To enable us to play the actual part we ought, important changes must be introduced both in the State Department and in our representation abroad. Such a policy will clash with tradition, but we can no longer follow plans dictated by conditions which we have outgrown.

Andres, H. *Die Einführung des konstitutionellen Systems im Grossherzogtum Hessen.* Pp. xi, 103. Berlin: Emil Ebering.

Bailey, L. H. *The Nature Study Idea.* Pp. ix, 246. Price, \$1.25. New York: Macmillan Company, 1909.

The thesis of this book—not stated, but read on every page—is that elementary education should consist in adjusting the student to the world. "The happiest life has the greatest number of points of contact with the world," and Nature Study is the most natural and forceful way of multiplying these points of contact for the child. The force of many chapters is devoted to making clear the distinction between Nature Study and Science, for it is a confusion of these terms that breeds the chief opposition which technical scientists hold for the subject. Science gives information—Nature Study gives spirit; Science is of the intellect—Nature Study is of the heart. A teacher who

thinks first of his *subject* teaches science; one who thinks first of his *pupils* teaches nature study. The two cannot conflict, for they occupy different fields. Part II of the book, entitled "The Teacher's Outlook to Nature," is a series of rather unrelated papers on the interpretation of nature. The volume closes with replies to miscellaneous queries propounded to the author concerning the teaching and advancement of nature study.

Bailey, L. H. *The Training of Farmers.* Pp. xiii, 263. Price, \$1.00. New York: The Century Company, 1909.

The author holds that the training of farmers is the most vital phase of the "rural problem." He deplores the lack of a true reading habit among them. He attributes it largely to the absence of a distinctive agricultural literature—excepting the technical journals. Perhaps the most striking chapters of this volume deal with a first hand investigation carried on by the author—as to why boys leave and why many return to the farm. The predominant reasons for leaving are, in the order of their importance: the farm does not pay; the physical labor is too great, and the social conditions are poor. The reasons for returning to the farm are in bold contrast; a love of the open country; good living; independence, and a good place in which to raise children.

There follows a strong chapter on rural schools, in which the writer declares that "even if the schools do not specialize in making farmers, they should at least cease in unmaking them." The influence of the agricultural colleges on the "away from"—and the "back to"—the farm movement is discussed. A chapter on "College Men as Farm Managers" is added.

Beer, G. L. *The Origins of the British Colonial System, 1578-1660.* Pp. viii, 438. Price, \$3.00. New York: Macmillan Company.

The third contribution of Mr. G. L. Beer to the history of the policy of Great Britain towards her American colonies maintains the high standard of scholarship established by the author in his previous works. This treatise, on "The Origins of the British Colonial System," like the author's other volumes, is written from original materials, most of which are in London and are still unpublished. The present study ends with the period of the Commonwealth and Protectorate. It is introduced by a chapter on English expansion, after which the author discusses the relation of emigration to over-population and explains the economic theory of colonization. A full account is given of the effect of tobacco production in the colonies upon the commercial and financial policy established by the mother country. The reasons for the restrictions placed upon the colonial export trade, and for the exclusion of foreigners from that commerce are set forth, and a clear account is given both of the economic development of the colonies and of the manner in which they were governed during the period to 1660.

Bianco, Jose. *La Propriedad Inmobiliaris.* Pp. 442. Buenos Aires: F. Landreau & Co., 1909.

In the register of real property in the city of Buenos Aires Dr. Jose Bianco has published a volume containing an account of the realty transactions

effected within the city during the year, to which is annexed the opinions of the register on disputed problems in real-estate law. The system of recording deeds in the Argentine Republic has been developed with great care and deserves more attention than it has received. Dr. Bianco has done a real service in collating in accessible form the legislation on the subject and in giving us a complete description of the operation of the system.

Blow, Susan E. *Educational Issues in the Kindergarten.* Pp. xxiv, 386.

Price, \$1.50. New York: D. Appleton & Co., 1908.

This is a remarkable book by a remarkable woman. It should be read by every woman of culture, whether interested in the kindergarten or not, as a tribute to the genius and solid intellectual achievements of an American woman. There is nothing in English written by a woman that approaches in philosophic grasp, critical acumen and brilliant expository power this book by Miss Blow. As a critical discussion of certain misapprehensions of kindergarten practice—the concentric programme, the free play programme, and the industrial programme, it is illuminating, convincing and inspiring. The book, however, is one of “educational issues” in a far wider sense than concerns only the kindergarten. Miss Blow does more than take the reader back to Froebel. She takes him back to the idealistic philosophy as the foundation of all genuine educational practice. Those who find fault with Hegel will find fault with Miss Blow; those who think they have transcended Dr. Harris in important points will think Miss Blow has gone beyond him only in detail and in charm of exposition. No teacher, whatever his place in the educational machine, can afford to leave a book like this unread.

Bordwell, Percy. *The Law of War Between Belligerents.* Pp. 374. Chicago: Callaghan & Co.

This work is both a history of the international law of war and a criticism of its doctrines. The arrangement is good and the citations and comment show that the author has endeavored to embody the latest developments in international law as shown in the practice in the Spanish-American, Anglo-Boer and Russo-Japanese wars and in the agreements growing out of the Hague conferences. Particular emphasis is given to the work of all the great international conferences in unifying the various rules of war. The Second Hague Conference is treated in detail, as are also the Red Cross Conventions.

The field covered by this work is too narrow to recommend it as a text for the average college class, but for study in the later years of a university course such manuals as this are of especial value. They make accessible the gist of the law on each point—a thing often difficult for the undergraduate to ascertain when the original conventions must be compared without such a guide as this.

Bradley, A. G. *The Making of Canada.* Pp. 396. Price, \$3.00. New York: E. P. Dutton & Co.

This volume is in reality the general historical background for the author's work on “Canada in the Twentieth Century,” and the sequel to his earlier

volume entitled "The Fight with France for North America." The series, therefore, affords a complete chronicle of Canadian development from the earliest times down to the present day. The period covered by the volume extends from about 1760 to 1815. Confined as it is to little more than a half century, the treatment is necessarily detailed and fairly exhaustive.

The chief topics covered are the conditions in Canada between the defeat of the French and the outbreak of the American Revolution; Canada during the Revolution, including the invasion and siege of Quebec; political affairs, immigration and internal progress in the years following 1783; and Canada during the War of 1812. As a whole the book deserves much praise for its pleasing style and generally readable character; it is marred only by too long paragraphs.

Bridgman, R. L. *The Passing of the Tariff.* Pp. 272. Price, \$1.20. Boston: Sherman, French & Co., 1909.

This volume consists largely of papers that have previously appeared in various magazines. It presents the arguments against our present high tariff in a popular form and contains a plea for the early reduction of duties. The author thinks that the tariff is destined to disappear in the near future. He believes that the world is organizing into a single economic and political unit, and that "world unity promises to cause radical changes in the trade relations between the fragments of the human race which are now arrayed under the hostile and superficial classification of nationality." It would be difficult to conceive of a broader cosmopolitanism than this implies. In view of the unmistakable tendency of all nations to adopt and maintain effective tariff restrictions, the conclusions of Mr. Bridgman seem rather to be prophecy based upon hope than to be judgment resting upon a true appreciation of national tendencies.

Cabot, R. C. *Social Service and the Art of Healing.* Pp. ix, 192. Price, \$1.00. New York: Moffat, Yard & Co., 1909.

Carnier, J. *Der Ehebetrug.* Pp. 72. Giessen: O. Kindt, 1909.

Caro, L. *Auswanderung und Auswanderungspolitik in Österreich.* Pp. 284. Price, 6.40 m. Leipzig: Duncker & Humblot, 1909.

Carpenter, C. W. *Profit Making in Shop and Factory Management.* Pp. 146. New York: Engineering Magazine.

Channing, E., and Lansing, Marion F. *The Story of the Great Lakes.* Pp. ix, 398. Price, \$1.50. New York: Macmillan Company, 1909.

Professor Channing and Miss Lansing have told the story of the Great Lakes admirably. The first of the three parts into which the volume is divided deals with the period of discovery and exploration ending with the seventeenth century. Part II gives the history of the political struggles which ended in the control of the Great Lakes by the United States. The last chapter in this part is entitled "The Black Hawk War in 1832." Part III gives an account of the occupation and development of the region about the Great Lakes.

Although the entire volume will appeal strongly to the student of history, the third part of the book will be especially appreciated by those interested in American and economic history. One of the best written chapters in the volume tells the story of "Lincoln and Douglas in Chicago in 1858-1861," but just what reason there was for including this chapter in a volume on the Great Lakes is not apparent. One wonders also why there is no chapter upon the fishing industries of the Great Lakes, an industry nearly as important economically as the fur trade, to which an appropriate amount of space is justly given. The volume closes with a well-selected and useful list of books classified topically.

Chapman, J. J. *Causes and Consequences.* Pp. xii, 166. Price, \$1.25. New York: Moffat, Yard & Co., 1909.

In this readable little book, arising, as he tells us, out of an attempt to explain an election, Mr. Chapman gives a forceful picture of the evils of our day, of the causes underlying them and of the prospects for our future. Having arrived at the conclusion that "man is an unselfish animal," he proceeds to present this idea from several points of view, summarizing first our political corruption, due, as he sees it, to the greed of commercialism, and then reviewing some phases of our social life where he sees the same enemy causing formalism, the suppression of the individual and intellectual dishonesty. A study of the law of intellectual growth as expressed by Froebel leads to the conclusion that the normal development of the individual and of the community can come only from the recognition of the fundamental law of nature, the basic altruism of man. The book has a strong moral tone and an encouraging optimism.

Cheyney, E. P. *Readings in English History.* Pp. xxxvi, 781. Price, \$1.80. Boston: Ginn & Co., 1909.

Professor Cheyney's volume is more than its title would imply. Although it consists mainly of extracts from classical writers and standard contemporary authorities, each selection is prefaced by a luminous paragraph written by Professor Cheyney. These introductory paragraphs make the volume, as a whole, a consecutive and interesting account of the main phases of the history of England. The volume thus supplements the ordinary text-book in a most satisfactory manner.

Clifford, H. *Further India.* Pp. 375. New York: F. A. Stokes Company.

Further India considered as a place name may be assumed to include all the southeastern peninsula of Asia, but it is the central, western and northern portions of that peninsula which are here discussed most fully.

The book is mainly of a historical nature, dealing with the progress of geographical exploration in Burma, Siam, the Malayan section and Indo-China. Incidental to tracing the course of exploration a very great deal is told about the principal features of the localities concerned. Abundant illustrations and a good map supplement the text, while not the least praiseworthy feature of the volume is the exhaustive bibliography covering no less than a score of pages.

From a book dealing with the work of many men who contributed each his quota to the work of exploration, it is perhaps unjust to single out one man as standing above all others, but in this case it is quite certain that the chapters dealing with Francis Garnier and the ancient Khmer civilization are worth as much as the rest of the volume. Garnier himself is one of the most interesting figures in the long list of explorers, and since his accounts of the little known Khmer civilization are not available to the average reader, the translated abstracts given here will well repay anyone for reading the whole book.

Conant, C. A. *A History of Modern Banks of Issue* (4th rev. ed.). Pp. x, 751. Price, \$3.50 New York: Putnam's Sons, 1909.

Cowen, Joseph, *The Speeches of.* Edited by his daughter. Pp. 349. Price, \$1.00. New York: Longmans, Green & Co., 1909.

Joseph Cowen, member of Parliament for Newcastle from 1873 to 1885, was noted for his personal eccentricities, his pronounced views and his political independence. While always a Liberal, he felt no hesitation in speaking and voting against his party when its measures did not coincide with his convictions. He exercised much influence in the north of England, not only from his wealth and ability, but as owner and editor of the "Newcastle Chronicle." His chief interest was in foreign affairs and Home Rule and he began to study these questions when a student at Edinburgh, where he was an influential member of a Radical club. He early made the acquaintance of all the important revolutionary exiles who found refuge in England, and did much to assist political agitation on the continent from 1848 to 1870. Many of his speeches have already been published in the "Life and Speeches of Joseph Cowen," by Major E. R. Jones, 1885. Some of these, with others taken from newspaper files, are here republished by his daughter, but without comments or explanatory notes. Just why this should have been done save as a work of filial piety it is hard to say, especially as a biography and complete edition of the speeches is advertised to appear later. The chief sentiment by which Cowen's views of foreign questions was dominated was hatred and distrust of the Russian government, which led him to defend and extenuate Turkish misrule and to view the possibilities of a reformed administration in Turkey with what his daughter considers to-day a prophetic eye. That he did not, however, view the Eastern question altogether with a seer's vision is evident from his prediction in 1880 that the recent Anglo-Turkish convention which gave England her position in Cyprus would result in rescuing the people of the Levant from their social and political misfortunes and make the land "bloom and blossom as the rose," and that it would enable England to construct the Euphrates Valley railroad. His confident prophecy in 1883 that "next year or two, or ten years hence," a deadly struggle was bound to break out between Russia and Austria has likewise not been verified.

In home affairs he was an ardent Home Ruler long before it became a part of the Liberal program, but in colonial questions he frequently found himself in opposition to Gladstone. He was an ardent imperialist and had

little patience with the "parochial policy" of the Little Englanders. The most pleasing feature of these speeches is their indication of independence, fearlessness, and complete conviction, for aside from the light they throw on the speaker's character and personal attitude, they cannot be considered important. Three of the best ones are strong denunciations of his party's Egyptian policy which resulted in the Gordon disaster. The style throughout is rhetorical and sometimes turgid and gives point to Gladstone's remark that Cowen's speeches smelled of the lamp.

Croly, Herbert. *The Promise of American Life.* Pp. 468. Price, \$2.00. New York: Macmillan Company, 1909.

To preserve equality of opportunity in the future a larger sphere of governmental activity must be occupied. "Individual freedom has resulted in a morally and socially undesirable distribution of wealth." Therefore, increased social legislation is inevitable. Until recently we have neglected the fact that concentration has been going on which has developed the business specialist and the political specialist who have overthrown the former conditions of free competition and democratic government, and the best lawyers, formerly the makers of the laws, are now ranged on the side of the class interests. For these conditions we need reform. Only Roosevelt among recent reformers unites critical with constructive ability, and even he "has done little to encourage candid and consistent thinking." To get real reform we must be freed from our present idea of "individual rights."

Interference to protect individual rights, results in favor to a class in both business and politics; in fact, class legislation is inevitable. Since that is true, its basis should be individual liberty joined with social equality. In political affairs we are rapidly working toward such a solution, but in economic affairs legal equality is only a fiction. A true democracy must "become expressly responsible for an improved distribution of wealth." Such a regeneration is possible only when the national power can be exerted as a unit—not in separate divisions such as our states. Control over industry and labor should be vested in the central government.

All these changes toward socialization of political control and wealth must, however, be made slowly and without violence. The average man should continue to work as best he can in his own sphere. The only present change that he should make is in his attitude toward the progressive national ideal. Rabid socialism if it got control would make impossible for centuries the true ideal—socialization.

Dalsh, J. B. *Procedure in Interstate Commerce Cases.* Pp. xiv, 494. Price, \$5.25. Washington: W. H. Lowdermilk & Co., 1909.

A systematic treatise such as Mr. Dalsh has prepared upon "Procedure in Interstate Commerce Cases" cannot fail to prove very useful, not only to lawyers who practice before the commission, but also to others who may wish to acquaint themselves with the organization, functions and powers of the Interstate Commerce Commission and with the relation of that body to the federal courts. Mr. Dalsh divides his book into two parts: the first deals

with procedure before the Interstate Commerce Commission, and the second with procedure before the courts. The author wisely introduces his volume with an account of the organization of the commission; this is followed by a discussion of the jurisdiction and duties of that body as laid down in the various acts from which the commission derives its authority. Part I also includes a full account of pleading and practice before the commission, of evidence before that body, and of proceedings after the issue of an order by the commission. In Part II the author considers the jurisdiction of courts in interstate commerce; then takes up pleading, practice, and evidence; and, lastly, appeal and error in federal court proceedings for the trial of interstate commerce cases. The appendix includes the text of all laws for the regulation of commerce from 1887 to the present. There is also a brief, but useful, bibliography, a table of the cases referred to in the book, and a full index.

Dealey, J. Q. *The Development of the State.* Pp. 343. Price, \$1.50. New York: Silver, Burdett & Co., 1909.

Although Professor Dealey treats his subject in an attractive literary form, the great extent of the field covered within so small a compass gives to his work of necessity somewhat the effect of a syllabus. The work is divided into four parts, as follows:

In Part One he considers social and political development. The chapter on social development is really a study of the progress of civilization as affected by the earth's productivity on the one hand and an ever-expanding standard of living on the other. On the political side the author uses essentially the same historical material as in the discussion of social development, bringing out the relation of changing conditions to the development of the state.

Part Two deals with sovereignty and the powers involved therein. The discussion of sovereignty is concluded by an interesting chapter on the relation of the church and state.

In Part Three government is discussed from the following viewpoints: Organization of the state, the three traditional powers of government, the legal sovereign and the electorate. Under this last heading the author gives a cursory discussion of some of the newer democratic institutions such as the referendum and the initiative and different forms of political representation.

Part Four deals with law and citizenship under the following chapter headings: "Classification of Law;" "Law-making or Legislation;" "Rise of Political Parties;" "Citizenship;" "Modern Democracy."

It is obvious that a brief work covering such an extensive field cannot enter into full discussion of the subjects to which reference has been made. The author studiously avoids controverted points, stating without elaboration accepted legal and historical facts. The work should be of some use to students, inasmuch as it groups in a single outline subjects not hitherto presented in precisely this way. The author probably would not claim that his volume has added materially to our knowledge of political institutions.

Dealey, J. Q. *Sociology.* Pp. 405. Price, \$1.50. New York, Silver, Burdett & Co., 1909.

Deming, H. E. *Government of American Cities.* Pp. ix, 323. Price, \$1.50. New York: G. P. Putnam's Sons, 1909.

Government by politicians or government by the people; this is the problem of American municipal government, the author maintains. City governments are nine-tenths business corporations and one-tenth political units, but our present system does not insure that either business or policy shall be controlled by the public. To remedy this defect we must first of all separate the policy framing offices from the administration. A city should have few elective officers, concentrate power in their hands and make all other officers dependent not on suffrages but on merit.

Local political activity can best be encouraged by giving the city a sphere within which the legislature cannot interfere with its activities. When the electors realize that the city will not be interfered with by the legislature and that they cannot call upon the state to protect the city against itself, the ground for a regeneration of local political life will be laid. Chicago's experience shows how much may be done even under present conditions when the city is thrown upon its own resources. Take the city out of state politics and not only is the municipality benefited, but one of the most potent causes of corruption in state politics is removed.

The author quotes in detail from the experience of American cities. He maintains that they have failed in government not through too much democracy, but because democracy has never been tried in them. Throughout the book the tone is uniformly optimistic. Adopt European—especially English—experience and city troubles will be over, often seems to be the author's attitude. The book would have been much improved had care been taken to avoid repetition of ideas, phrases, and words; "local," for example, occurs fourteen times in a page of two hundred words (p. 9); "legislative" and "legislature" together appear twenty-one times in two pages (pp. 26, 27). These defects of style, however, should not obscure the merits of the book. Its statements are drawn from the most recent material and give an encouraging picture of American municipal progress. The municipal program of the National Municipal League is published as an appendix.

Dewe, J. A. *History of Economics.* Pp. 334. Price, \$1.50. New York: Benziger Brothers.

Taking as a premise that the formative causes of historical events are three in number, namely, Physical Surroundings, Religion and Economics, and dismissing the first two factors with a mere word of introductory explanation, Professor Dewe summarizes the field of economics from an historical viewpoint. The subject is divided into three parts, dealing in turn with the ancient, medieval and modern periods. Under each division the influences of economic conditions upon various nations, countries and phases of social life are detailed with careful insight and in a style both lucid and concise. By far the most interesting part of the volume is that dealing with modern theories and the relation of economics to political problems and history. The closing chapters on the French Revolution and present governmental tendencies are especially good and round out the summary in a charming manner.

This book will be valuable as a resumé for those who prefer the historical viewpoint.

Earhart, Lida B. *Systematic Study in the Elementary Schools.* Pp. 97.

Price, \$1.00. New York: Teachers' College.

The value of this "contribution" lies chiefly in its theme and its pioneer character. The problem of teaching pupils to study systematically is one of great importance. Teachers for whom the problem does not exist should find the monograph stimulating; thoughtful teachers who are looking for a solution of the problem will not be satisfied with the analysis offered of the nature of logical study nor with the nature or extent of the "experiments" which form the basis of the conclusions of the book. Dr. Earhart, however, deserves much credit for breaking ground in an important field.

Electrification of Railway Terminals. Pp. 353. Chicago: R. R. Donnelley & Sons.

This volume is a report prepared under the auspices of the mayor of Chicago and the committee on local transportation of the city council. The contributors to the work consist of M. J. Foreman, chairman of the committee on local transportation of the city council; W. A. Evans, commissioner of health; Paul P. Bird, smoke inspector; Gilbert E. Ryder, smoke inspection department; and Herbert H. Evans, mechanical engineer. The report contains a strong argument for avoiding the smoke nuisance by substituting electricity for steam power within the limits of Chicago. Since this report was made, the president of the Illinois Central Railroad, which company it was thought would be the first to electrify its Chicago terminal, has reported against such action by the company at the present time. The city council of Chicago has passed an ordinance requiring all railroads in the city to electrify their lines before the end of 1912. It remains to be seen whether such an ordinance can be enforced.

Eliot, C. W. *Education for Efficiency.* Pp. 57. Price, 35 cents. Boston: Houghton, Mifflin Company, 1909.

This little volume contains two addresses by the former president of Harvard University on "Education for Efficiency" and "The Definition of the Cultivated Man." The two essays constitute in a complementary way the treatment of but one problem. Efficiency Dr. Eliot defines as "effective power for work and service during a healthy and active life." To attain this end education must comprehend two processes, power and knowledge. There can be no education for efficiency which does not aim at the training and care of the body, the habit of quick and concentrated attention and the discernment of beauty and excellence. The motive power underlying all is the power of enthusiasm and the passion for truth.

In his second address the author gives a new definition of the cultivated man intending to show that "the idea of cultivation in the highly trained human being has undergone substantial changes during the last century." It now includes, among other elements, the development of a character forged in the furnace of modern complex life, a power of literary appreciation and

expression and the training of a constructive imagination. The possession of all these characteristics by one individual may never yet have been realized. Their value as an ideal is, however, none the less important.

Enock, C. R. *Mexico*. Pp. xxxvi, 362. Price, \$3.00. New York: Charles Scribner's Sons, 1909.

Enock, C. R. *Peru*. Pp. xxxii, 320. New York. Charles Scribner's Sons.

Fillebrown, C. B. *The A B C of Taxation*. Pp. ix, 229. Price, \$1.20. New York: Doubleday, Page & Co., 1909.

Mr. Fillebrown has long been an authority in certain phases of taxation in this country. This volume of essays on subjects of real estate values, assessments, tax rates, etc., though confined almost entirely to definite problems within the State of Massachusetts, is nevertheless exceedingly instructive and in most cases convincing. His theoretical discussion of ground rent as a social product is lucid and emphatic, his illustrations well chosen and carefully tested. Though one soon discovers that Mr. Fillebrown is a single taxer, one finds that he does not force his views with unbecoming vehemence, nor does he attempt to evade the arguments of those who oppose him. The method of imposing the single tax in the case of public utilities and corporations in general, seems less clear than for other kinds of property. As a whole, however, the book is well worth careful reading by those interested in the methods of raising public revenue.

Fisher, Irving. *Economic Aspect of Lengthening Human Life*. Pp. 18. New Haven: By the Author, 1909.

Professor Fisher's pamphlet is a plea to the great insurance companies to expend an infinitesimally small percentage of their incomes to educate the public and to influence legislators to conserve and prolong human life. The proposition is made a purely business one and the insurance companies are urged from the standpoint of economy to regard it favorably.

Fry, W. H. *New Hampshire as a Royal Province*. Pp. 527. Price, \$3.00. New York: Columbia University Press.

The history of New Hampshire prior to the revolution is admirably presented in Dr. Fry's substantial volume. The book opens with an introduction of sixty-five pages, which covers the period ending in 1679, when New Hampshire became a royal province. The following century of New Hampshire's history is topically treated, a long chapter being given to each of the following subjects: The Executive, The Legislature, The Land System, Finance, Justice, and Military Affairs. The chapter on finances is especially satisfactory and makes one wish that a chapter had been added dealing with the colony's maritime and domestic commerce. The volume is certain to be given a secure place as a work which will be referred to by all serious students of colonial history.

Garcia, G. (Ed.). *Historia de Neuvo Leon*. Pp. 400. Mexico: Ch. Bouret, 1909.

This volume contains a history of the State of Neuvo Leon by Captain Alfonso de Leon and General Fernando Sanches de Zamora. In it there is

much material relating to both Texas and New Mexico and, therefore, is of interest to students of American history.

Garcia, G. (Ed.). *La Revolucion de Ayutla*. Pp. 264. Mexico: Ch. Bouret 1909.

Dr. Genaro Garcia, the director of the National Archaeological Museum in Mexico City, has undertaken the publication of an extremely valuable set of documents relating to Mexican history. In this volume he has published a series of documents relating to the revolution of Ayutla. It contains the letters of General Doblado, who was one of the leaders in the revolutionary movement. The fact that the constitutional development of Mexico has been so deeply influenced by the revolution of Ayutla, lends to this volume special interest to the students of Mexican history.

Gephart, W. F. *Transportation and Industrial Development in the Middle West*. Pp. 273. New York: Longmans, Green & Co., 1909.

Gray, B. K. *History of English Philanthropy*. Pp. xv, 302. Price, 7s. 6d. London: P. S. King & Son.

Groszmann, E.; Brees, E.; and Schachner, R. *Gemeindebetriebe in der Schweiz, in Belgien und in Australien*. Pp. vi, 123. Price, 2.80 m. Leipzig: Duncker & Humblot, 1909.

Hamilton, C. *Marriage as a Trade*. Pp. vii, 257. Price, \$1.25. New York: Moffat, Yard & Co., 1909.

A popular discussion of the social and industrial dependence of women and a work in some of its aspects new and original, presenting various phases of the dependence of women.

Hayes, C. H. *An Introduction to the Sources Relating to the Germanic Invasions*. Pp. 229. New York: Longmans, Green & Co., 1909.

Headland, I. T. *Court Life in China*. Pp. 372. Price, \$1.50. New York: F. H. Revell Company, 1909.

Thomson, J. S. *The Chinese*. Pp. 441. Price, \$2.50. Indianapolis: Bobbs-Merrill Company, 1909.

Both these books are far above the average of those dealing with the Far East. Each in a different field offers an unusual amount of fresh information about a country whose importance, though often insisted upon, is not even now appreciated.

Professor Headland's book is given especial value from the fact that his wife has been for twenty years physician to the family of the late Empress Dowager's mother. This gave her an *entrée* into court circles seldom possessed by a westerner. It is not surprising, therefore, to find that the author has largely availed himself of the material contained in his wife's notebook. It would have been impossible to produce such a book without its aid. The intimate personal life of the court as it centered round the Dowager is the subject of the first third of the work. Then follow chapters discussing the efforts of the weak Kuang Hsü to bring reform to his hard pressed country; sketches of the home of the court—the Forbidden City,

and of the capital. There is also a discussion of the present controlling faction and its attitude toward reform, which while not thorough, gives us nevertheless a fresh viewpoint.

Mr. Thomson's book is harder to describe. It reminds one at times of Macaulay's famous description of the British Empire—there is no well-defined thread of narrative, but the reader feels he has been led through a "splendid jumble." Perhaps this is an efficient way to describe the tissue of conflicting interests which China now presents. Though one is often at a loss to know where the author is leading him, he cannot read this book without having a material addition to his knowledge of the Chinese. There are but few books which contain a greater wealth of anecdote and illustration. The discussion of the new influences in Chinese life is good, especially the chapters on China, Political and Picturesque, Modern Commerce and Business in China and Japan's Commercial Example to China. Chinese Art, Literature and Religion also receive sympathetic treatment.

Both these books deserve attention—the one for the intimate personal touch it gives with a court of which we have known almost nothing, and the other for the interpretation of the varied peoples over which the court rules.

Henderson, C. R. *Social Duties from the Christian Point of View.* Pp. xii, 332. Price, \$1.25. Chicago: University of Chicago Press, 1909.

To all those who regard the church as one of the most potent social forces of our time, the creation of the new social literature of the church is a most hopeful sign. It reveals the awakening of social consciousness and a new sense of social responsibility. This new volume of Professor Henderson's is a valuable contribution in this sphere. It considers a wide range of clearly recognized social duties from a purely Christian point of view and indicates a wholesome reaction against the ultra-individualism which characterized the church for a century or more. The book is not given to generalizations, but is concrete in pointing out both the nature and the solution of many practical social problems with which the church is vitally concerned. Social duties in relation to the family, to neglected children, to workingmen, in rural and urban communities, of municipal government, of business and leisure classes, in charities and correction, and the like, are outlined and discussed.

The volume is published as a text-book for the study of social problems and is admirably adapted to the use of study classes in churches, Young Men's Christian Associations and similar organizations. The Topics for Study and Discussion and Reference to Literature at the close of each chapter enhance the value of the book both to the class and to the individual reader.

Hillquit, Morris. *History of Socialism in the United States* (4th edition).

Pp. 371. Price, \$1.50. New York; Funk and Wagnalls Company.

The book is a conventional presentation of the history of socialism. The earlier chapters contain material dealing with social experiments made by the Owenites, the Fourierites and the Icarians. After dismissing these premature attempts to organize social communities, the author presents the history of

the socialist labor party, which has been gradually replaced by the modern socialist movement. The modern socialist movement is stated to be an organized working class movement dependent upon scientific economic theories and is rapidly gaining adherents. As the socialist labor party disintegrates its members are said to join the new socialist party and trade unionists are constantly coming over to the standard of this new group.

Hobson, J. A. *The Industrial System*. Pp. xx, 338. New York: Longmans, Green & Co., 1909.

The book is a theoretical analysis of the modern industrial system. It begins by picturing the system as a unit, showing the various elements in the production and distribution of goods and their transfer from the producer to the consumer. The author next takes up a series of diagrams and illustrations showing the relation between the different businesses, the relation between the industrial units of one business and the relation of the individual producer and consumer to specific businesses and to the whole industrial system. The book also contains a careful analysis of the relation between producers and consumers through the medium of the economic system, the development of prices, of markets, trusts, labor unions and the relation of the individual to industry. This latter subject is dealt with in an exhaustive chapter entitled "The Human Side of Industry." Particular emphasis is laid in the discussion on the subject of unemployment. The various industrial problems just enumerated are connected with the theory of the industrial system enunciated in the beginning of the book. The work is illustrated throughout with excellent diagrams and tables. The whole is a keen analysis of the modern industrial system, presenting in several forms the newer phases and problems of industry. It is original, new, and shows a particular grasp of the industrial system.

Hopf, L. *The Human Species*. (Translated from the German.) Pp. xx, 457. Price, \$3.00. New York: Longmans, Green & Co., 1909.

The purpose of the author is well expressed by the sub-title, "Considered from the standpoints of comparative anatomy, physiology, pathology and bacteriology." In great detail he traces man's place among animals showing the correspondence of organs. The book is a treasury of detailed information, well arranged and accessible. It is technical in language. There are many good illustrations. In addition to this exhaustive treatment of man as a physical being the author includes a sketch of primitive man, and space is found for one hundred pages of description of his psychology, his arts and achievements. It is altogether a valuable reference book.

Horrocks, Joseph. *Railway Rates: The Method of Calculating Equitable Rates and Charges for Merchandise Carried on Railways*. Pp. 485. Price, 21s. London: S. Sonnenschein & Co., Limited, 1909.

Having spent the larger part of his life in studying railway rates and in the management of railway freight traffic, Joseph Horrocks intended to put the results of his work and experience into book form. Unfortunately, he died shortly before realizing his purpose. The work he thought of writing, however,

was completed by two nieces, and thus students of transportation are given the benefit of Mr. Horrocks's life labors.

After presenting definitions of services, liabilities and obligations of railway carriers, the author describes at much length the methods which he believes can be successfully used in calculating what rates should be charged upon different kinds of merchandise. The larger part of the book is devoted to an application of this method by working out for imaginary companies charges for different railway services and rates upon various kinds of merchandise. The volume is technical and detailed. Its appeal will be only to those engaged in the work of actual rate making or to government officials who are called upon to test the reasonableness of railway charges.

Hutchins, B. L., and Harrison, A. *A History of Factory Legislation.* Pp. xviii, 372. Price, 10s. 6d. London: P. S. King & Son.

In his preface to this new edition of an accurate and valuable book Mr. Sidney Webb says: "The opening of the twentieth century finds it (factory legislation) prevailing over a larger area than the public library or the savings bank: it is, perhaps, more far-reaching than even the public elementary school or the policeman." The authors have traced the growth of this movement in England with painstaking care, from the legal, the administrative and the social standpoints. The early factory movement, they tell us, was "an emotional, religious, charitable one," while in recent years it has taken on a more economic and broadly social character. At first only the symptoms were observed, but now the search is for underlying causes of industrial ills.

The conclusion is reached that during the last generation a "considerable advance in administrative efficiency" has been made. But special legal exemptions still exist for hundreds of trades, illustrating the "extraordinary timidity" which has attended all parliamentary wrestling with the subject. The authors are of opinion that more help was rendered the cause by the Conservative party at the beginning, and by the Liberal party in later years, though the agitation has not been essentially a political one. The work is well indexed and supplemented by excellent statistical and bibliographical appendixes.

Jewett, F. G. *The Body at Work.* Pp. xvi, 247. Price, 60 cents. Boston: Ginn & Co., 1909.

Johnston, M. G. *Plain American Talk in the Philippines.* Pp. 197. Price, \$1.25. Manila: John R. Edgar & Co.

This is a small book of small value. It contains little information regarding the Philippines that is either new, interesting or useful, unless one happens to find interest or value in a magnification of petty and local agitations.

Jones, J. P. *India: Its Life and Thought.* Pp. xvi, 448. Price, \$2.50. New York: Macmillan Company.

No carefully written book about India can fail to be interesting, even though its message is not entirely new or startling. This volume maintains the

average, despite the fact that much of its space is devoted to affairs long familiar in a general way. As a whole, the book may be described as dealing mainly with the religious aspects of Indian life and thought, and for that reason is not likely to appeal to the lay reader as strongly as its alluring title might imply.

For all interested in missionary activities the several chapters on the principal Indian religious systems and the present place held by Christianity will prove attractive reading. The author, as the result of many years of labor as a missionary in that field, is well fitted to give first-hand information; the readable quality of the book is due largely to this fact.

Despite its predominating religious character, the book has certain sections well calculated to hold the attention of any reader. Somewhat over a third of the volume is devoted to the topics of Hindu home life and the Hindu caste system, both of which are presented in an especially satisfactory manner. The discussion of the caste system and its significance to Indian life and progress is perhaps the most lucid and concise exposition to be found in all the host of books which touch upon that subject. The only general criticism which can be made against the book is based on the failure to discuss more adequately the material, as opposed to the spiritual, side of native Indian life.

Kirk, William (Ed.). *A Modern City*. Pp. 363. Price, \$2.70. Chicago: University of Chicago Press, 1909.

Providence has been free from many of the problems that beset other American municipalities. She has not until recently felt the handicap of a large floating population nor that of the assimilation of an illiterate foreign element. Her history has, therefore, had a greater unity than most American cities. There has been a homogeneity in population which is one of the conditions of good government.

In industry the city has had varied fortunes. It has been successively a whaling port, a city with large export trade and a manufacturing center. Its later development has emphasized the importance of labor in the city's growth. The increase of the industrial population has also complicated the city's system of government. Its electorate is still a restricted one. A property qualification is required for voting for members of the city council. As a result but a small proportion of the total population shares in the government. In spite of the representation of property in government, however, the finances have not been better managed than in cities with a greater popular representation. In education Providence has always been a leader. In art and philanthropy, also, commendable public spirit is displayed. Finally in religion Providence has been the spokesman of Rhode Island and has always stood for a broad humanity. Even here, however, the changes now being introduced in the city population have brought discordant elements.

Like all books written in co-operation, there are some overlappings and lacunæ, but the authors have presented a series of valuable studies unduplicated for any other American city.

Knopf, S. A. *Tuberculosis, A Preventable and Curable Disease.* Pp. xxxii, 394. Price, \$2.00. New York: Moffat, Yard & Co., 1909.

A book of this character has been urgently needed. This readable guide is an attempt to popularize and render more effective the present campaign against tuberculosis. The book is devoid of confusing technical language and is intended to serve the needs of the patient, his family, the physician, and the constantly increasing group of social workers who either in private or official capacity are striving to eliminate this disease.

Among the topics treated are the nature of the disease, necessary precautions for the consumptive, the question and problem of climate, home treatment, institutional care, methods of prevention, and the duty toward the problem of municipal, state, and federal authorities as well as of employers, educators, and social workers. The care of the consumptive receives the necessary two-fold attention—the medical and hygienic requirements of the individual patient and the public and charitable agencies provided for his relief. The program of prevention is adequately stated and the entire gamut of reforms suggested which will be needed to cope effectively with the disease.

The book contains more than one hundred excellent illustrations, many of which are explanatory and directly educative, while all of them add to the general interest. The fame of the writer and the character of the book should without doubt combine to make this presentation of the subject an excellent one for propaganda purposes.

Laut, Agnes C. *The Conquest of the Great Northwest.* Two vols. Pp. xx, 822. Price, \$5.00. New York: Outing Publishing Company.

The history of the Hudson Bay Company by Miss Laut is written mainly from materials obtained from the documents in Hudson's Bay House, London, which consist of "The Minute Books of some two hundred years, the Letter Books, the Stock Books, the Memorial Books, and the Daily Journals kept by chief factors at every post and sent to London from 1670. These documents are in tons. They are not open to the public." In addition to these documents "there is a great mass of unpublished unexploited material bearing on the Company in the Public Records Office, London." It must have been a most difficult task for the author to acquaint herself with the mass of unpublished material used in the preparation of her volumes. The finished work is detailed, possibly more so than is desirable. Had some of the unimportant matter been eliminated and the essential facts been presented in clearer outline, less burdened with wearisome minutiae, the educational value would have been much enhanced. The two volumes, however, make a real and substantial contribution to American history.

Lucas, C. P., and Egerton, H. E. *A Historical Geography of the British Colonies.* Vol. V, Canada, Parts I and II. Pp. 729. Oxford: The Clarendon Press.

It goes without saying that Volume V of the "Historical Geography of the British Colonies" is a work of high merit that will be appreciated by every student of the history and government of Canada. The first volume of the

work, which is from the pen of Sir Charles Lucas, closes with the Peace of Paris in 1763; the second volume, Part II, written by Hugh E. Egerton, is divided into three books, the first of which is devoted to an account of "The Separate Provinces" and covers the period from 1763 to 1839. Book II deals with "The Union," while Book III is concerned with "The Dominion." The later chapters of the work, particularly those dealing with "The Development of the West," with the "Relations with the United States," the "Canadian Pacific Railway," and "The Dominion of To-day" are of peculiar interest, not only to students of Canadian affairs, but to the much wider circle of readers interested in American history in general. The ten maps accompanying the text add much to the value of the work.

Macdonald, W. *Dry Land Farming, Its Principles and Practice.* Pp. xiv, 290. Price, \$1.20. New York: Century Company, 1909.

The author, though perhaps best known as Dry Land Agronomist for the Transvaal Department of Agriculture, has treated the subject in this volume chiefly from an American point of view. Any farming carried on where the rainfall is between zero and thirty inches per annum he classes as "dry farming." It is not claimed as a new "discovery," for it has been practiced since the dawn of civilization in India, Mesopotamia and Egypt. The principles were first preached to civilized Europe by the English agriculturist Jethro Tull. His famous epigram, "Tillage is manure," need only be expanded by adding "and rain" to be a perfect and complete summation of dry farming principles.

If every drop of precipitation on the western mountain peaks could be utilized there would still not be enough to irrigate more than ten per cent of the western arid lands, leaving immense tracts that will always have to be handled with "Dry Land" methods. Of course tillage cannot *make* rain, it can but *conserve* it, that is, store it up in the soil. As a rule, in these dry regions the rain of two seasons must be stored up in the soil to answer the needs of one crop. This means that every other year the land produces no crop, but is tilled continuously to preserve a protective "dust blanket" over the moist soil below, preventing evaporation of the precious water. In the last part of the book the author gives a thorough and practical discussion of the crops best suited to more or less arid districts, pointing out in what respects their culture differs from that in humid climes. In many instances, as he shows, these arid regions have distinct advantages over the humid for the culture of certain crops.

Marsh, B. C. *Introduction to City Planning.* Pp. 156. Price, \$1.00. New York: By the Author, 1909

Beginning with a forceful chapter on the cost and causes of congestion of population, in which particular emphasis is laid upon the influence of transportation, manufacturing, immigration and the social advantages of city life, the author takes up the question of city planning and deals with it from several viewpoints. The theory of city planning is discussed from an American viewpoint and the application of the theory is illustrated by the develop-

ment in several European cities. It is in Germany that the chief advances in city planning have been made, but England, with the new garden city idea, has made rapid strides in the same direction. In America, on the other hand, planning has been spasmodic and unorganized, and until recently the real problem of city planning has not been appreciated. The work concludes with a general statement of the technical phases of city planning by an architect and some practical hints on the methods of securing a city plan. The author has treated his subject forcibly and has illustrated it thoroughly. Perhaps his chief fault lies in regarding the city plan as a panacea.

Mathews, J. L. *Remaking the Mississippi.* Pp. 265. Price, \$1.75. Boston: Houghton, Mifflin Company, 1909.

In view of the widespread popular interest in improving American waterways, and particularly the Mississippi River system, it is fortunate that Mr. Mathews has published a book giving a clear and readable account of the problems to be solved in subjecting that river to control for purposes of navigation and for the reclamation of overflowed lands. The various chapters in the book describe the river, give an account of its activities, explain what is necessary to be done, and what is being done, to confine the river to its major bed. The regulation of its minor bed, or navigable channel, is also instructively discussed. There are chapters upon the Missouri River, upon the Ohio River, the lakes-to-the-gulf waterway project, and other allied topics.

Mills, J. S., et. al. *Our Foreign Missionary Enterprise.* Pp. xv, 282. Price, 50 cents. Dayton, O.: United Brethren Publishing House.

This volume, written especially as a text-book for mission study classes, comprises a description of the missionary activities of the United Brethren in Christ Church and the opinions of the members of a deputation who investigated present conditions in foreign lands where the church is operating. Dr. W. R. Funk, who visited Sierra Leone, discusses operations in West Africa, with emphasis upon the work of the United Brethren missions. Dr. S. S. Hough speaks of the physical, political and religious features of Porto Rico. Bishop J. S. Mills, who visited China, Japan and the Philippines, gives an able treatment of the historical, economic and social conditions in these countries, and presents very conclusively the influence of Christianity upon them. He shows an unusual knowledge and grasp of social influences and customs for a writer on missions; consequently the sociological and ethnological value of this volume is far in advance of the average work of its kind.

Mulrhead, John H. *By What Authority?* Pp. vi, 90. Price, \$2. London: P. S. King & Son, 1909.

To those who wish to know what the English Poor Law Commission reported but who cannot take time to read the report itself this little volume will be invaluable. It consists of a series of discussions of various phases of the report set forth in very suggestive fashion. The conclusions of both majority and minority are critically considered. It deserves wide circulation.

Munford, B. B. *Virginia's Attitude Toward Slavery and Secession.* Pp. xiii, 329. Price, \$2.00. New York: Longmans, Green & Co., 1909.

This book aims to show that Virginia was not devoted to slavery nor hostile to the Union and that the state seceded, not because its people wanted the institution of slavery preserved and extended, but because of disapproval of the federal policy of coercion in violation of the principles upon which the Union was founded. To prove the soundness of his conclusions the author quotes extensively from printed documents and from manuscript sources relative to Virginia's dislike of slavery, her recognition of the evils of the institution and the consequent tendency toward emancipation, to Virginia's devotion to the original principles of the Union, and to her attitude toward secession. The book as a collection of documents has much value, and the comments and opinions of the author are frequently worth while. Though only the conservative side of the question is presented, that was the more important one. The future historian who deals with slavery and its influence will be grateful for this work.

Otis, E. O. *The Great White Plague.* Pp. 330. Price, \$1.00. New York: T. Y. Crowell & Co., 1909.

The Germans have aptly called tuberculosis the disease of the common people. It is found among all classes of society, but is especially prevalent among the poor. The underfed, the poorly housed and scantily clothed, the workers amid unhealthy surroundings are especially its victims. In many cases the causes of the disease are social and therefore beyond individual control. "The workman cannot change the bad air of his workshop or live in a model tenement, or always obtain sufficient and nutritious food." The annual death-roll in the United States from this disease alone numbers 150,000, in Pennsylvania over 10,000, and in the city of New York 10,000. Besides, tuberculosis destroys men and women at the most productive period of life. Dr. Otis has pointed out all these facts, but has presented the hopeful side as well, in a form intelligible and interesting to the ordinary reader. The disease is preventable, since its causes are known. In successive chapters he describes in a simple manner the nature of the disease, the soil in which it develops, the symptoms, the home treatment, the means of prevention, the special problem among children, and the responsibility of the government.

Parsons, P. A. *Responsibility for Crime.* Pp. 194. New York: Longmans, Green & Co., 1909.

Pic, Paul. *La Protection L'égale des Travailleurs et le Droit international ouvrier.* Pp. 172. Paris: Félix Alcan, 1909.

In this elementary study the author lays particular emphasis on the conditions of industrial workers in France and the legislation which has been passed there, although some space is devoted to the theory underlying protective legislation. The book ends with a plea for an international system of protection for workers. To the beginner, interested in the subject of the legal protection of workers, this work will prove of value.

Rossiter, W. S. (Ed.). *A Century of Population Growth, 1790-1900.* Pp. x, 303. Washington: Government Printing Office, 1909.

This volume, compiled by W. S. Rossiter, former chief clerk of the census, is the outcome of an attempt to preserve permanently the valuable but vanishing census records which still remain relating to the first year of constitutional government. Its interest is further increased by a discussion of the historical aspects of the first census, and an analysis of the returns of this census together with a comparison of its figures with the corresponding figures at later censuses. These figures have been augmented from other statistical information where it proved to be available.

The scope of the volume is seen by the titles of its fifteen main divisions: Population in the Colonial and Continental Periods; The United States in 1790; The First Census of the United States, Area and Total Population; Population of Counties and their Subdivisions; White and Negro Population; Sex and Age of the White Population; Analysis of the Family; Proportion of Children in White Population; Surnames of the White Population in 1790; Nationality as Indicated by Names of Heads of Families Reported at the First Census; Interstate Migration; Foreign Born Population; Statistics of Slaves; Occupations and Wealth. Among some of the most interesting tables found in the volume is one on the names of heads of families at the first census, including facts as to both nomenclature and nationality.

Saint-Leon et Martin. *Cartells et Trusts.* Pp. x, 259. Paris: Victor Lecoffre, 1909.

Saleby, C. W. *Parenthood and Race Culture.* Pp. xv, 389. Price, \$2.50. New York: Moffat, Yard & Co., 1909.

A professed follower of Francis Galton, the author presents the first complete work on eugenics—the science of race culture. While disavowing the leadership of Galton in some minor details, the author accepts his main conclusions, and has worked out many of their phases far beyond the point reached by his predecessor. The work treats of the question of eugenics largely from a biologic viewpoint and contains little reference to the economic side of the question. In order to insure the establishment of a high type race, through intelligent mating, a deliberate and conscious restriction on the number of offspring and a careful training of children, the author holds that women must be educated for motherhood as men are educated for a profession. It must, however, be borne in mind that the function of motherhood, being more important than any other to race continuity, should receive more careful attention. But the work as a whole, while over-emphasizing heredity and under-emphasizing the influence of environment, represents a great advance in the plain, broad statements of the problems of race development.

Small, A. W. *The Cameralists.* Pp. xxv, 606. Price, \$3.00. Chicago: University of Chicago Press, 1909.

Professor Small is known as a painstaking, careful student, who excels in the critical analysis and presentation of the views of the writers. This volume represents a vast amount of work. The political and social philosophy

of that group of Germans known as the Cameralists forms, Dr. Small believes, the trunk line of the evolution from the Reformation to the French Revolution. Whether Dr. Small's estimate of the importance of these men is finally accepted or not, he has surely performed a great service in giving English students an opportunity to know these writers. The meaning of this statement is clear when one realizes that practically nothing else of like kind exists in English.

Swan, C. A. *The Slavery of To-day*. Pp. xvi, 202. Glasgow: Pickering & Inglis.

Nevinson's "A Modern Slavery" describes the horrors of the slave trade on the coast of Angola and in the Portuguese colonies, Santo Tomás and Príncipe. The Rev. Charles A. Swan in this book supplements Nevinson's work by describing in detail the horrors of slavery recruiting on the mainland. There are many pictures, showing the methods by which the work is done. The detailed testimony presented in the form of a diary is enough to convince the most confirmed doubter that the abuses now practiced are as bad as ever. After reading the book one wonders how long such countries as Belgium and Portugal will be allowed to countenance an institution long ago destroyed by all truly progressive nations.

Tanner, E. P. *The Province of New Jersey, 1664-1738*. Pp. 712. Price, \$4.00. New York: Columbia University Press.

The author states that "the object of this study is to give an account of the political institutions of New Jersey during the period of her executive union with New York . . . a discussion of economic and social development of the province is not a part of the problem." Those who read the volume, however, will find that the author's discussion of the political problems throws much light on some of the economic and social questions of the day. Three chapters, for instance, are given to a discussion of the land system in East and West Jersey. The financial affairs of the colony also receive due consideration. In the main, however, attention is confined to questions of government, which are discussed in a thorough and scholarly manner. The book will be read with appreciation by all earnest students of American colonial history. It is to be hoped that this volume upon New Jersey will be followed by similar studies of other colonies whose political history is yet but partially written.

Thomas, W. I. *Source Book for Social Origins*. Pp. xvi, 932. Price, \$4.77. Chicago: University of Chicago Press, 1909.

Walz, K. *Das Hessische Kommunall eamtenrecht*. Pp. viii, 121. Darmstadt: C. F. Winter, 1909.

Warren, G. F. *Elements of Agriculture*. Pp. xxii, 434. Price, \$1.10. New York: Macmillan Company, 1909.

Watson, C. B. *Prehistoric Siskiyou Island and the Marble Halls of Oregon*. Pp. 147. Ashland, Oregon: By the Author, 1909.

This little book is a bit of nature study or sympathetic interpretation of an

interesting region by one thoroughly familiar with it. "Siskiyou Island" of the Cretaceous epoch is better known to-day as the Klamath group of mountains in Southwestern Oregon and Northwestern California. Similarly the marble halls of Oregon are the wonderful but little visited limestone caves in the heart of the Klamath mountains near the California line. The book is not scientific, it is in places conversational and occasionally rather drawn out. To most readers it would not appeal very strongly, except in the description of the caves, which is good.

Willson, W. *Division and Reunion*. Pp. xx, 389. Price, \$1.25. New York: Longmans, Green & Co., 1909.

REVIEWS.

Beveridge, W. H. *Unemployment—A Problem of Industry*. Pp. xvi, 317. Price, \$2.40. New York: Longmans, Green & Co., 1909.

This is a collection of lectures delivered at Oxford University, with an introduction on the general phases of the problem of unemployment. The work is a painstaking, scholarly discussion treating of the sources of material as well as of the other various phases of the problem. Cyclical employments, both for the year and for a period of years, the reserve supply of labor in the community, and the loss of quality which the unemployed suffer during their unemployment, are in turn considered.

After this thorough-going discussion, the author takes up the remedies for unemployment, dealing first with the charitable funds, municipal relief works, the administration of the poor law and the unemployed workman act of 1905. He looks upon all of these attempts to regulate unemployment as unqualified failures and passes on to the newer remedies which he suggests. He lays particular emphasis upon the necessity of educating the labor force out of its immobility, insisting that youth should be adventurous and old age secure. In order to provide an opening for the adventurousness of youth, he advocates labor exchanges, while the security of old age is to be guaranteed by out-of-work pensions.

The author begins his book by saying that "The problem of unemployment lies . . . at the root of most other social problems." But throughout the book and in his conclusions he treats of unemployment as though it were a very incidental thing to the modern industrial system and might be very easily alleviated or eliminated. The work is thorough and scholarly, but it does not show a full appreciation of the causes underlying unemployment.

SCOTT NEARING.

University of Pennsylvania.

Callender, G. S. *Selections from the Economic History of the United States, 1765-1860*. Pp. xviii, 819. Price, \$2.75. Boston: Ginn & Co., 1909.

As stated in the author's preface and in the publishers' announcement of the volume, "This book is the result of an effort to provide a manageable body

of reading for undergraduate classes in American economic history. It is intended to be used either in connection with a course of lectures, or a text-book which will give the general outline of the subject. These, and the brief essays at the beginning of each chapter, with the headings under which the extracts are arranged, will make clear to the student their significance and bearing. The book will be of use also in those general courses in American history in which it is common to give considerable attention to the economic and social, as well as to the political side of our national development."

The editor's introductions to the fourteen chapters of the book are well written and they summarize clearly most of the salient features of the economic history of the United States. These chapter prefaces are so valuable that one wishes that they were longer and that they included a discussion of the source materials presented in the volume. One serious limitation to the book is that there are no explanatory or introductory statements regarding the authors from whose writings selections have been made by Professor Callender, nor concerning the significance of the materials reproduced in the book. Had Professor Callender interpreted and correlated the source materials presented in the volume, he would have made the book more serviceable both to college students and to other readers. This omission was made because the author intends the volume to be used as a supplement to a course of lectures; but the value of the book would have been greater had the materials been integrated and appraised by a brief introductory paragraph preceding each quotation.

EMORY R. JOHNSON.

University of Pennsylvania.

Cleveland, F. A. *Chapters on Municipal Administration and Accounting.* Pp. xvi, 361. Price, \$2.00. New York: Longmans, Green & Co., 1909.

Constructive municipal reform is indeed the present necessity in civic life, and with this necessity as a basis, Mr. Cleveland expounds his very interesting theory of the cause of political maladministration. Combined with a description of the average state of affairs in our American municipal life, is the author's program designed to effect the reforms so urgently desired.

First, the humiliating fact becomes apparent that it is the condition of almost total ignorance on the part of taxpaying and voting public as to simple matters of the city's business transactions that constitutes the favorable environment for the political bacteria known as "grafter;" that this ignorance of municipal affairs is illogical and inexcusable; and that this social parasite will flourish as long as the ordinary methods of city administration are not known. Again, efficient administration is never possible nor co-operation effective without a uniform knowledge of facts between the different governmental departments. In other words, there must be full and constant publication of facts, not only to enable the public servant to do his duty in office, but also to make it possible for the citizen to vote intelligently on all public measures and to know when, where and how maladministration

is taking place. Private business demands efficient co-operation, thorough knowledge of all facts and responsibility at the proper source. In the same way, the municipality as a public business needs the search light of publicity and the intelligent relation of all facts for proper administration.

In this volume of compiled addresses and magazine articles, Mr. Cleveland has made it easy to understand many of the rudimentary defects of government and with keen business sense has suggested the solution of many civic problems.

C. LINN SEILER.

University of Pennsylvania.

Ferrero, G. *The Greatness and Decline of Rome*, Vol. V, *The Republic of Augustus*. Pp. iv, 371. Price, \$2.50. *Characters and Events of Roman History*. Pp. viii, 275. Price, \$2.50. New York: G. P. Putnam's Sons, 1909.

In the preface to this fifth volume of his work, the author says that it completes his study of "The Greatness and Decline of Rome;" in spite of the fact that the story is brought down only to the death of Augustus in 14 A. D. and thus scarcely touches upon many of the most important aspects of Rome's mission in world history, while the ultimate decadence of the wonderful civilization she fostered falls entirely within a later period, Ferrero has elsewhere intimated that he proposed ultimately to pursue the subject through the imperial period and down to the age of Diocletian. Hence we may expect at some future day from his brilliant pen a study of the later and in many respects more interesting and important phases of Roman history. The volume before us presents the same excellencies and defects that have been frequently noted in the preceding ones—keen analysis and interpretation, brilliant conjecture, attractive presentation and the consideration of the widest variety of forces, political, social, economic and psychological, to explain the course of events; but likewise a desire for originality that induces the author to overemphasize certain points and thus distort the true perspective and a willingness to build a large superstructure of explanation upon scattered and uncertain passages in our far from trustworthy sources. This may be seen in his use of Cassius Dio, who wrote in the third century and most of whose statements cannot be fully verified, whose statements are frequently cited, as though they were formal, contemporary documents. It is chiefly on the authority of one of Dio's good stories—that dealing with the peculations of the freedman Licinus—that Augustus is made to perceive for the first time the resources and possibilities of Gaul and to adopt the most far-reaching schemes for the development of that province. The Romanization of Gaul is in fact the chief theme of the volume before us. Gaul is to be deliberately made the Egypt of the West. Its resources are to be developed and through its wealth the balance of the empire is to be restored and the preponderance of the East redressed. The arguments for the development of Augustus' Gallic policy and its importance are for the most part convincing, and its relations to the

proposed conquest of Germany, to the antagonism between East and West, to the general economic conditions of the time and to the social reform movement are clearly set forth. The chief value of the volume lies in the success with which Ferrero demonstrates the interrelation of all the complicated forces in society and the necessity of studying each one in order to explain even the simplest occurrences.

Ferrero's course of lectures delivered last year before the Lowell Institute has been published in a volume uniform in size and appearance with his large history. They are made up of material selected from two previous courses delivered, the one in 1906 before the Collège de France, and the other the following year in Buenos Ayres and Rio de Janeiro. Never before, perhaps, has an historian been given the opportunity of personally addressing so widespread and diversified an audience and that, too, on a subject apparently as remote in interest from the material world of to-day as is the history of Rome. In the last lecture of the series on "Roman History in Modern Education" he sets forth what he considers the real reasons for the popularity of his subject. It is that the history of Rome "includes, as in a miniature drawn with simple lines, well defined, all the essential phenomena of social life; so that every age is able there to find its own image, its gravest problems, its intensest passions, its most pressing interests, its keenest struggles; therefore, Roman history is forever modern, because every new age has only to choose that part which most resembles it, to find its own self." Hence, too, this history has to be rewritten every fifty years to meet the needs of a new generation and illustrate the new problems that arise. For nearly a hundred years following the French Revolution political interest attached chiefly to the struggle between monarchy and republic and the histories of Rome have been written from this point of view. But during the last twenty-five years the interest in this question has declined and been replaced by moral, social, and economic problems, and it is his emphasis on the similar problems of Roman history, Ferrero believes, that has won him his present popular recognition. In "Corruption in Ancient Rome and its counterpart in Modern History," he sums up the fundamental idea of his conception of history, namely, that most of its crises depended on "the transformation of customs produced by the augmentation of wealth, of expenditure and of needs," and he claims that his interpretation of history is at bottom psychologic and not economic. Of the remaining lectures of the series, "The History and Legend of Antony and Cleopatra," "The Development of Gaul," "Nero," "Julia and Tiberius," deal with various aspects of the struggle between the ideals and civilization of the Occident and the Orient; "Wine in Roman History" seeks to show the importance of the culture of the vine and its relations to the general development of the times; and the "Social Development of the Roman Empire" states the views Ferrero expects to develop in the future installments of his history of Rome.

A. C. HOWLAND.

University of Pennsylvania.

Fowler, W. W. *Social Life at Rome in the Age of Cicero.* Pp. xiii, 362. Price, \$2.25. New York: Macmillan Company, 1909.

This study of the economic and social conditions in the first century B. C., though intended for the class-room, can be read with profit by anyone interested in the broader aspect of social questions at the present day, for the problems which faced the reformer in old Rome were in principle curiously like those of the modern world. On such topics as the crowded condition of city population and its effects, the decay of old religious standards, the unequal distribution of wealth, political corruption among the masses, the food supply, divorce and the decay of family life, the effects of a rising standard of living—on these and many others touched upon in this book much food for reflection is offered. For the early empire and for that of the fourth century the books of Friedländer and Dill have familiarized us with these subjects, but for the last century of the Republic Fowler's book is the only one in English to give us a picture "of life and manners, of education, morals, and religion."

The most interesting portion of the book is undoubtedly the two chapters which deal with the lower population, and the business men and their methods, respectively, for these are subjects on which information is not easily obtained. The Roman proletariat is considered under three heads—how they were housed, how they were clothed and fed and what employments they followed. As to the business men, we are given some real insight into their activities as public contractors and as bankers and usurers and told the lines on which their financial enterprises were organized. There is much here that is new to the average reader and there is a curiously modern flavor about the story of how business and politics went hand in hand. The manipulation of foreign relations so as to advance the private interests of certain bankers and shareholders, while no new story, is clearly pointed out by Fowler and illustrated by the case of Rabirius Postumus and his relations with Egypt. The facts in this case are sketched only in a general way and might well have been supplemented by reference to the excellent study on this financier to be found in Guiraud's *Etudes économiques*.

The discussion of slavery in Chapter VII, while following in many respects the beaten track, is rendered attractive by a wholesome appreciation of the difference between ancient and modern economic conditions. It is true that the depopulation of the provinces was accelerated by this system of forced labor, but without it the development of Italian agriculture would have been impossible. Moreover, it is held that the condition and employment of the free laboring classes was not affected injuriously by the presence of the slaves, and the author supports the contention of Seeck and Wallon that the extensive manumission of slaves at this period, instead of mitigating the evils of the system, had a distinctly injurious effect on Roman life and character.

A. C. HOWLAND.

University of Pennsylvania.

Gibson, A. H. *Human Economics: Natural and Cosmopolitan Economy.*

Two vols. Pp. 406. Price, \$3.50. New York: Longmans, Green & Co., 1909.

The author, a practicing public accountant, published the first section of the book, the part devoted to Natural Economics, in 1900. In this section he proposes an entirely original division of the subject into the four following branches: 1. Natural Economy. 2. Cosmopolitan Economy. 3. Communital Economy. 4. Individual Economy.

The first division, Natural Economy, treats of the operations of the human faculties in satisfying human wants and the motives that induce such operations. The second section, Cosmopolitan Economy, investigates the workings of private property and free exchanges within the limits fixed by natural economy. The third division, Communital Economy, studies the institutions and regulations that tend to promote the welfare of particular communities. The fourth section, Individual Economy, is apparently added for completeness of classification, since, according to the author, "each individual is a sealed book to be read by himself alone."

The first section was fully reviewed at the time of its original publication and needs little attention now. It is occupied wholly with production, treating successively the elements of production and the objective and subjective limits of production. While the terminology and method of treatment are novel, the results conform in general to the accepted principles of the science.

The second section comprises Book II on Cosmopolitan Economy and is here published for the first time. While treating of the subjects ordinarily included in treatises on political economy, the method is original and the nomenclature unique. Moreover, the assumptions of an ideal state, in which absolute ownership alike in lands and chattels and full freedom of exchange exists, render the conclusions theoretical in the extreme. The practical adjustments that must be made to fit the conclusions to any community the author promises to discuss in his projected work on communital economy. The author's assumption of an ideal economic state reminds one of Clark's Static State in which competition is at work with ceaseless activity and with little friction. On the other hand, in his use of algebraic formula and in the exactness of his definitions he follows closely the methods of mathematical economists. Occasionally he makes use of the accountant's method of showing economic relationships with such good results that one may well wish that he would develop that feature still further.

While it is impossible within the limits of a brief review to enter into detail, attention may be called to some of the characteristic definitions and to some of the conclusions. The idea of capital, as might be expected of an accountant, includes "everything in which an individual or group of individuals has a legal estate and for which there is a buyer's valuation" (page 298). The augmentation of capital is brought about by a class of "productive-amalgamators." In his treatment of the several kinds of wealth one is reminded of Fisher's chapter on the summation of capital accounts.¹ In his

¹Fisher, *Capital and Income*.

conclusions in regard to the effects of the production of a surplus revenue he reminds the writer of the well-known theory of Professor Patten.

Some of his propositions which at first seem novel, to say the least, prove on consideration to be worthy of close attention. Such are the following. "A policy of universal thrift would bring about the degradation of our species" (page 312), and "The object of individuals who abstain from luxuries in order to increase their wealth is attained only if a proportionate number of other individuals do not" (page 314), and "The vital object of nationhood can be attained only in proportion to the nation's relative wealth" (page 318).

On the whole the work is stimulating reading to the economist, but is not likely to appeal to the lay reader. Its style is somewhat involved and its use of entirely new terms such as hire-valuation for rent and wages, symbolic and evidential money, devestors, productive-amalgamators, communal and cosmopolitan wealth, make its reading laborious even to the trained economist. It is however attractively printed and has a good index.

MAURICE H. ROBINSON.

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Goodnow, F. J. *Municipal Government.* Pp. ix, 401. Price, \$3.00. New York: Century Company, 1909.

This is an excellent book. It is a comprehensive treatment of the entire field of municipal government, and will be found one of the best works which has appeared for the use of university classes. Historical development and a critical analysis of the present difficulties of municipal government hold about equal prominence. Covering so wide a field there has been of necessity, the re-use of material which has appeared in the author's other works; this is especially true in the discussion of present American conditions, much of which is adapted from Professor Goodnow's "City Government in the United States." Liberal use is made also of the work of other scholars, especially Weber's "Growth of Cities." Other authors repeatedly cited are, Shaw, Munro, Wilcox, Fairlie and Eaton.

The first three chapters review city growth and location and the character of population in cities. Then follows a historical review of municipal government, emphasizing the difference in modern and ancient city life. An extended discussion is given to the position of the city in modern life in order to show its dual character, as an administrative division of the state and as a government for satisfaction of local needs. A review of the legal position of the city in Europe and the United States shows that "the interests of the state . . . and of the city . . . require that the state shall have a control . . . over the discharge by it of the functions which may be granted." This is further substantiated by the detailed study of the different branches of the city government. The city councils, executive and police cannot be freed from state control. "City populations have been in the past and are now incapable without assistance from the state of securing the kind of government which is demanded." The last chapters discuss the

proper systems of charity administration, finance, education and the management of public utilities.

Professor Goodnow sees little hope for immediate improvement in American municipal conditions. "We can hardly help believing that the economic and social conditions existing in many of the cities of the United States . . . are such as to make good popular city government extremely difficult, if not impossible . . . until changes in those conditions have been made." Changes must be made in our systems of nominations and elections, civil service, finance and administration in general before we can hope for substantial improvement.

CHESTER LLOYD JONES.

University of Pennsylvania.

Hamilton, Angus. *Problems of the Middle East*. Pp. xvi, 484. London: Eveleigh Nash, 1909.

The recent diplomacy of Great Britain and United States in the East has not been characterized by aggressiveness. Mr. Hamilton believes that this policy has seriously endangered Great Britain's ascendancy in the region to the northwest of India. He recounts at length the numerous attempts to bind to England by treaty, Persia, Afghanistan and Tibet. England's diplomacy in all three cases has proven less than a match for that of Russia. In Persia the recent delimitation of spheres of interest has given England the barren waste, while Russia has acquired a command over territory large in extent and fertile in resources. Previous treaty arrangements with Afghanistan and Tibet should have prevented the entrance of Russia into the important diplomatic position she now holds in those countries.

A detailed study is made of English trade interests in the Persian Gulf and the probable effect that the Bagdad railway will have upon them. Mr. Hamilton urges upon his government to demand an active share in the construction of the railway. England should have at least the command of the river trade in Mesopotamia and the control of the railway in that section. Otherwise Germany, whose trade interests are rapidly growing, will thrust herself between the spheres of influence now held by England and Russia and thus introduce a fourth power in the already complicated Persian muddle.

A chapter on the Hedjaz railway shows the surprising success that the Sultan has had in securing contributions from Mohammedans everywhere for financing a railroad to the holy cities of Arabia. This may well be a warning to those countries controlling large Mahomedan populations as to what may happen if they fall out of sympathy with their governments. Two other chapters treat of the rise of the young Turks and the passing of Korea. The latter chapter adds but little to what has been often told. These subjects seem at first to be unrelated to the problems of the middle East, but the connection of Turkey with Asia Minor problems and the treaty between Japan and England, involving, as it does, the possible protection of India, justify the inclusion of these apparently unrelated topics.

CHESTER LLOYD JONES.

University of Pennsylvania.

Warbasse, J. P. *Medical Sociology*. Pp. xvi, 355. Price, \$2.00. New York: D. Appleton & Co., 1909.

Backed by three thousand years of experience and over two centuries of the application of scientific methods, the medical profession to-day is prepared to render the broadest social service. Modern philanthropy is no longer content with merely relieving individual distress. It seeks out the causes of disease and poverty and takes measures to remove them and to promote efficiency. The author in this volume has declared it to be the special aim of medical science to investigate the conditions which destroy health and to study their prevention. "The plea that goes out to the public from the great heart of the medical profession to-day is that prevention shall take the place of cure." It appeals to the people to take measures to stop typhoid, tuberculosis, yellow fever, and syphilis.

A happier selection of title for the work is to be found in the sub-title, "The Relations of Medicine to Society." It is not a particular brand of sociology that the author is setting forth. It is the relation of a long established science to the welfare of the community. Our laws have long recognized that sickness and health were matters of the gravest social concern. But law is inadequate without education. Medical science must furnish the authoritative information which will place prevention largely in the hands of the public.

R. E. CHADDOCK.

University of Pennsylvania.

Woodruff, C. E. *Expansion of Races*. Pp. xi, 495. Price, \$4.00. New York: Rebman Company, 1909.

The title of the book is misleading as it deals primarily not with the expansion of races, but with the diffusion and growth of the population. Population is described as a fluid which flows in response to economic stimuli. Malthus is quoted as authority for the statement that the food supply will ultimately be overtaken by population, the author maintaining that we are now in the throes of a nitrogen famine as a result of supersaturation. The food of the Anglo-Saxon race has been chiefly nitrogenous, but in the last few decades the cost of nitrogenous foods has risen to such a point that it is above the purchasing capacity of most members of the community. As a consequence a lower and lower standard of efficiency is maintained by each succeeding generation which is able to produce less and less nitrogenous food. One of the most interesting illustrations of this world-wide phenomenon is a diminishing birth-rate, which is making itself felt in every civilization dominated by the Anglo-Saxon race.

Race suicide represents an attempt by the Anglo-Saxon people to adjust population to the nitrogen supply, and in so far as it is successful it is most salutary in its effect. Population, however, will keep on increasing as it has always done and as it does so the nitrogen starvation will become more and more acute.

While the Anglo-Saxon races are dependent upon the tropics for a part of their food, acclimation is impossible. The author, who has spent several years in the Philippines, cites elaborate evidence to show that the change in the pigment cells in the skin which occurs in the tropical regions is essentially detrimental to the Anglo-Saxon temperament and lowers the Anglo-Saxon standard. It will, therefore, be necessary for the Anglo-Saxon race in order to keep up their food supply to use the tropical countries as a store house and food producing region, to dominate them politically, but not to colonize them.

The book ends with a very ordinary discussion of modern political tendencies in which the author points out the impossibility of socialism and the undesirability of government by democracy. The book is essentially superficial in parts, the author repeatedly making unwarranted statements and accepting material which is to say the least questionable. On page 49, for example, he cites a sociological study of the overcrowding in London, written "several years ago," in which are the following statements which "I presume are correct." In a superficial study of prostitution the author also cites figures without any adequate statistical basis. The book is a collection of indiscriminate, poorly arranged material, part of which is valuable and part valueless. The conclusions which the author attempts to draw from his material are open to serious question.

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